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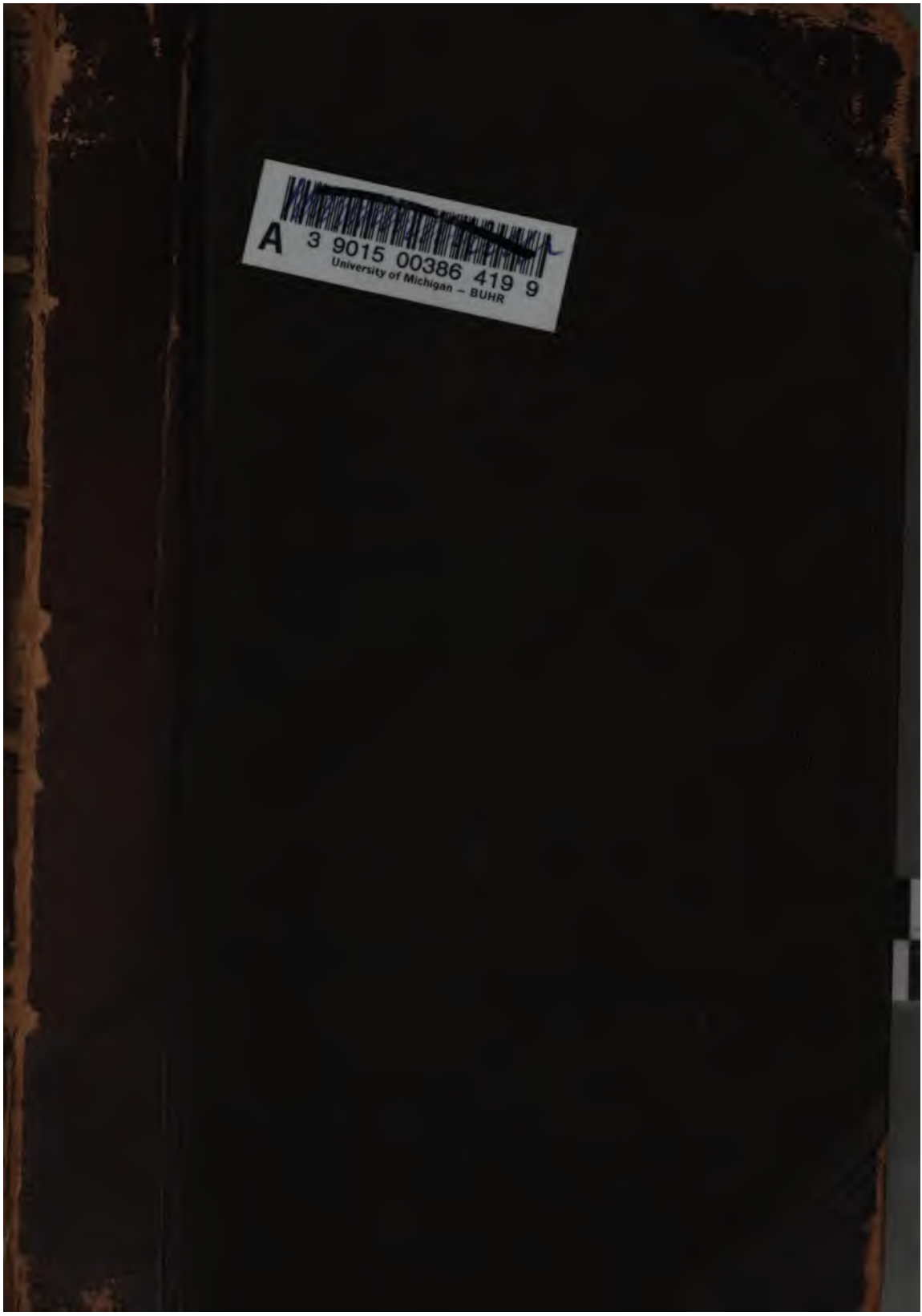
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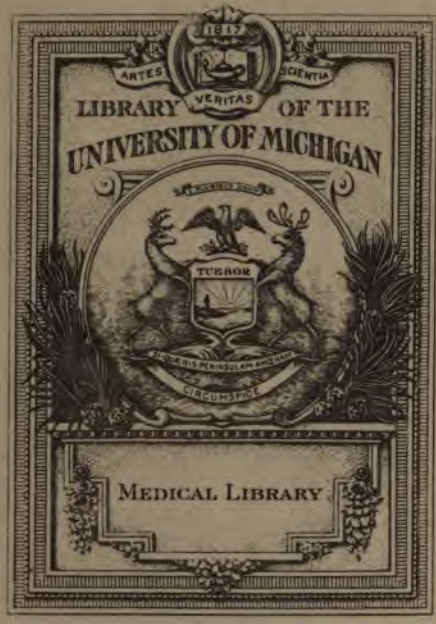

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Dr. J. E. Jackson.

THE CHICAGO

MEDICAL JOURNAL.

De LASKIE MILLER, M. D.,
EPHRAIM INGALS, M. D.,
Editors and Proprietors.

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ORIGINAL COMMUNICATIONS.

OBSERVATIONS ON PUERPERAL FEVER.

By DE LASKIE MILLER, M. D., of Chicago.

Being a portion of the Report of the Committee on Obstetrics, read to the Illinois State Medical Society. May, 1864.

The prevalence of *Puerperal Fever* in certain localities within the State during the past year—the diversity of opinions entertained by the profession upon the nature of the disease—its communicability and its treatment, are reasons sufficient for making at least a brief allusion to it, in the report of your Standing Committee on Obstetrics.

More than ordinary interest attaches to the history of this disease, from the fatality which has attended its prevalence wherever it has appeared in an epidemic form, and the antagonistic views which have been entertained in regard to it. And yet these reasons would not justify your Committee in occupying the time of this meeting, with considerations relating to it, if the leading minds in the profession were, at the present day, agreed or nearly in harmony in regard to two important points, viz., its communicability from the attendant

or others, to the parturient, and upon the most successful plan of treatment. But, unfortunately, upon these points the most opposite opinions are held and taught by medical men.

The terms employed to characterize the disease, as it has prevailed at different times and places, give us some idea of its severity, such as "fatal malady"—"terrible"—its name is "a word of fear"—"appaling," etc., and the statistics which have descended to us, prove that these phrases were not the expressions of a poetical fancy. "While mortality in London is about 1 in 150, and in Lying-in-Hospitals varies from 1 in 70 to 1 in 100, the mortality in the Hôtel Dieu and in the Maternité was 1 in 20, sometimes 1 in 13, chiefly caused by puerperal fever. The mortality in the great Vienna Hospital was as high as 1 in 10, and even 1 in 6."

In London, in 1761, the mortality was so great that in some of the smaller Lying-in-Hospitals, they buried two women in one coffin to conceal their loss. The course of the disease was similar in most other cities of Great Britain and the Continent; the statistics of which would be out of place here, by taking too much space, without elucidating any practical principles.

A more interesting, and possibly useful, object would be attained by passing in hasty review, the diverse opinions which have at different times been entertained of its nature, and the various modes of treatment which have been adopted therefrom.

Strother, in 1716, was the first to apply the epithet "*Puerperal Fever*" to this disease, but there is reason to doubt whether he entertained more correct or definite ideas of the nature of the disease, than had his predecessors, who, under the general term "*Child-bed Fever*," were in the habit of referring to most of the diseases of the puerperal state.

The disease broke out as an epidemic in Paris, in 1746; and at the Hôtel Dieu it prevailed with such fatality, that it is asserted scarcely any recovered, and from this time we may date our first reliable history of it. Malouin has given an accurate

and faithful account of this epidemic. Tenon's description, given many years later, states that the disease had become naturalized, for from 1774 to 1816, seven out of every twelve women delivered were seized with the disease.

Among the earliest accounts of the treatment adopted in the disease, we find that of Doulcet, who relied entirely on emetics, and it is affirmed saved several patients, and upon this he supposed that he had discovered the specific. This is not the only instance in the history of medicine in which subsequent experience has failed to sustain the claims of the discoverer.

In 1768, Denman advised depletion on the first onset of the attack, and tartar emetic to cause vomiting afterwards.

Dr. Hulme, in 1772, claimed the honor of discovering the cause of puerperal fever. He considered inflammation and gangrene of the omentum, as the essential disease, with some deterioration of the blood. He observes, "But the most capital of all remains, I mean, to cut off the purulent fomes, the chief cause of the disease, and to restore the tainted omentum and intestines to somewhat of their perfect state."

Dr. Gordon, of Aberdeen, in 1792, believed the disease to be an inflammation, but of the erysipelatous type. He advocated strongly, bold and early depletion, 20 or 24 oz. at once and if necessary 10 more soon after. "When I took away," he says, "only 10 or 12 oz. of blood from my patient, *she always died*—but when bled freely she never failed to recover."

Mr. Hey, in 1812, resorted to active purgatives, but these proving unavailing, he was induced to resort to Dr. Gordon's plan, taking frequently from 30 to 40 oz. and even 50 oz. of blood, and it is affirmed with good success.

Dr. Armstrong, in 1819, also followed the depleting plan, by venesection and calomel purges.

Dr. Gooch relied on venesection, leeching, and cathartics.

In 1823, Dr. Copland was in charge of Queen Charlotte's Hospital during the prevalence of puerperal fever, and from the failure of the systems of treatment then in vogue, he

adopted a *stimulating* plan. On the first appearance of the symptoms of the malady, he administered from 8 to 16 grs. of camphor, combined with from 10 to 20 grs. of calomel, and from 1 to 3 grs. of opium, and repeated this every 4, 5, or 6 hours. Soon after the second dose of the medicine had been taken, half an ounce of spirits of turpentine, with castor oil, was administered, the stimulent and anodyne being still continued, and counter irritants applied to the abdomen. The success of this course, he assures us, in the malignant form, was almost complete.

Without intending to elaborate the subject in all its phases, three topics will claim attention at the present time. The nature—the communicability—the treatment.

What is the nature of *Puerperal Fever?* Here we meet a most important question, for not only the treatment of the disease, but in numerous instances, the immunity of the patient from the disease, will depend upon the views which the physician may entertain. Is the disease essentially a phlegmasia? Changes are frequently met with in *post mortem* examinations, in some one part of the system or another, having the semblance of the results of inflammation, but they are not uniform in their location or appearance, and they are sometimes absent altogether, no one of which being constant. If the disease depends upon inflammation in some organ, of course, when the local inflammation is *absent*, the puerperal fever can not be *present.*

The testimony of those who have had the largest experience in treating this disease, and the best opportunities to observe its effects upon the system, concur in one particular, viz., that cases are met with in which no morbid appearances can be found in the tissues after death. Then common inflammation is not essential to the existence of the disease.

The disease may run its course with such rapidity as to destroy the patient in a few hours, like Armstrong's "congestive disease," and Mackintosh's "latent peritonitis;" but do not terms like these deceive the observer, by leading him to sup-

pose that he comprehends the case, while he remains innocent of the slightest idea of the true nature of the malady? are we not sustained in this supposition by what has been already collated? What could be more opposite than the depletion of Gordon, Hey, and Armstrong, and the stimulation of Copland, each claiming to treat the same disease.

The fallacy consists in not recognizing a new element in puerperal fever, not found in ordinary inflammation, which renders its nature essentially different from peritonitis, phlebitis, metritis, etc., etc. The new element, we are led to believe, is a poison in the blood, producing its septic influence there—and through this medium producing changes sometimes in the tissues of important organs. That the disease is truly zymotic. Its history observes the laws of all poisons.

1st. It is a uniform disease; the description given of it an hundred years ago, describes the disease of to-day equally well.

2d. It selects a tissue for its seat, viz.,—the serous membranes and tissues analagous to them.

3d. The definite action is in the blood, the quantity of fibrine is increased, its quality is deteriorated.

4th. The action of the poison is modified by the quantity introduced into the circulation. When it is in excess, the patient may die suddenly, without leaving any local manifestations of its presence. I am familiar with Dr. A. Clark's observations in regard to the valves at the extremities of the uterine sinuses, and the appearances of inflammation there in puerperal fever. But these appearances have not always been detected by other observers. When the poison is in less quantity its course is less rapid, and is followed by local changes.

By this view we are enabled to account for the diversity of opinions which have been promulgated of the nature of the disease. When partial or erroneous views are entertained of a disease, the observer will note the appearance of the individual case as representative of the class, and the account will

therefore vary with each case examined, whereas, if the disease depends upon a *matires morbi* in the blood, accidental causes may determine in which organ, if any, the local changes are to be found.

It would be interesting to trace this poison to its source, and describe in detail the mode of its communication, but we can do little more than state conclusions.

1st. It may originate within the system, from the decomposition of organic matter.

2d. It may be introduced from without, by exposure to dis eases characterized by ichorœmia, or,

3d. It may be communicated by the attendant, who is the vehicle of transportation from a distant case.

Notwithstanding evidence as irrefragable as can be produced to prove the contagiousness of any disease, is abundant upon this, still it has been maintained in a most positive manner that *puerperal fever* is not communicated thus, and this position is defended by rare eloquence, and a personal experience of many years is referred to as confirmatory of the position.

Suppose a physician in extensive practice is frequently called in consultation in cases of puerperal fever, and has no communicated the disease to his patients, what does it prove? Merely that a contagious disease is not necessarily taken by exposure. This is not peculiar to puerperal fever, for then would the prevalence of scarlatina, measles, small-pox, etc., rapidly become general upon the breaking out of the disease. No system could resist the power of the contagion; but what physician, that has practiced for any considerable time, has not known some of these diseases to affect a single member of a family, while all the others escaped? A single case coming within the knowledge of the reporter will be detailed briefly, as representative of many similar ones that might be collated from other sources.

A physician had been engaged to attend a lady in her first confinement, whose gestation had been remarkably free from every annoying symptom; she was educated, and refined in

manners, and occupied a position in society, that would induce any physician to be vigilant that no accident should occur, to compromise her recovery.

This physician was called in consultation to deliver a placenta which had been retained, a long time after the birth of the child. Without much difficulty the decomposing and fetid placenta was removed; the hands of the operator were washed in soap and water with care; still the noxious odor adhered to the surface most tenaciously. In the night following, this physician was called to attend the lady referred to. The labor was perfectly natural, and by no means severe, but in twenty hours from the time of delivery, she was attacked by a severe chill, followed by high febrile movement in the system—tenderness of the abdomen—tympanites, and arrest of the lochia; and although treatment was commenced promptly to arrest the progress of the case, the effort was unavailing, for the patient died on the second day after the chill.

This patient was perfectly healthy; no accident occurred during or subsequent to labor, to account for the attack, yet she died of puerperal fever. Did not that physician have reason to feel that he had communicated the poison to his patient which caused her death? If this were a solitary instance he might not censure himself, but when we remember that many cases are on record, similar in every essential particular, the case is quite different.

How is the contagion communicated? through the atmosphere from patients affected with puerperal fever, erysipelas-gangrene, etc.; by the clothing; from the surface of the body, by the breath of the attendant. That the disease is communicable in the manner indicated, your Committee entertain not the slightest doubt; and they feel called upon to state emphatically their convictions, more especially as medical works written in a most fascinating style, inculcate an opposite view.

This leads to the conclusion that preventive means are never to be lost sight of by any one engaged in obstetric practice. The danger of communicating the disease should at once

suggest the impropriety of placing parturient females contiguous to any of the diseases which we have indicated, as liable to communicate puerperal fever. A recognition of this principle would render the propriety of constructing large lying-in hospitals, or appropriating extensive wards to the reception of lying-in women, more than problematical. During the time of the writer's visit to Edinburgh, last fall, which was one of great interest, puerperal fever was prevailing there, and whenever it makes its appearance, as it frequently does, in the Royal Infirmary, it is of sufficient gravity to give rise to the greatest anxiety in the minds of the accomplished and skillful physicians having charge of the institution, and we could but feel that a lying-in woman, in a cabin, with barely the necessaries for the emergency, might well be envied by the occupant of a large ward, when the disease is prevailing.

Then what is the duty of the physician, in private practice, during an epidemic of the disease? If engaged at all in obstetric practice, manifestly to relinquish all cases of a zymotic nature, and should the disease appear in his patient, to decline further calls of that nature. A physician is not at liberty to expose the unsuspecting to the danger of this disease, and it is difficult to understand, how those who disregard these principles, can satisfy their consciences while violating these conditions.

It is not our intention to prolong this report by a criticism on the various modes of treatment which have, from time to time, been recommended, further than to raise the question of the propriety of abstracting large quantities of blood in the treatment of puerperal fever. Can a disease be removed from the system by venesection, when the whole volume of blood is affected, and has the power of reproducing itself? If we believe this disease belongs to the class of zymotics, the answer is unhesitatingly, no. Nor shall we detail minutely the plan of treatment which has, under our observation, been most successful. We can at most give only an outline sketch nor would more than this be desirable at the present time.

The plan may be indicated under three heads, viz., 1st. Neutralize the *matires morbi* in the system, in the uterus, and in the vagina.

2d. To eliminate the disintegrating and effete materials from the system.

3d. To support the vital forces of the system.

The most efficient agents for fulfilling the first indication, yet brought into requisition, we believe to be *chlorine* and *bromine*. The former we have already used sufficiently to enable us to speak with confidence of its good effects. In regard to the latter, from a limited experience with it, we are led to hope for the most satisfactory results. These remedies are valuable in every stage of the disease, and especially indicated when the discharges are profuse or offensive. Locally, they may be applied in solution or used in the form of vapor. Applied in either form they are efficient in proportion to the completeness with which they come in contact with the source and seat of the disease. They are to be introduced not only into the *vagina*, but also into the cavity of the *uterus*. We are far from advising a reckless system of intra uterine injections, but introduced with proper precautions, experience in a few cases, has proved them to be not only harmless but highly efficient agents. The mode proposed is, first to wash away all offensive discharges, at least as completely as practicable, then convey the remedy, properly diluted, to the part, gently through a suitable tube. If vapor be used it may be conveyed to the part by the same apparatus.

The use of chlorine in this disease is not new. It has been demonstrated to be, in this and other diseases, not only a deodorizer but a valuable disinfectant.

The local use of bromine in the treatment of puerperal fever was suggested from its acknowledged value as a remedy in erysipelas, hospital gangrene, etc.

The *second indication* can best be fulfilled by the use of remedies, believed to possess the power of preventing or arresting the septic influence of the poison, already circulating

with the blood, such as the mineral acids—chlorine salts—the bromides--the sulphites of lime and soda, etc.

To effect the third object, anodynes hold an important place, not only to relieve pain and irritation, but in full doses to arrest the rapid tissue metamorphoses that would take place without their use: with these, tonics are indispensable, but several of the most powerful tonics have been already indicated to fulfil the second indication; nutritious diet is indispensible, and in many cases stimulants can not be dispensed with.

Thus far it has been our object,

1st. To bring into immediate contrast, the diverse views which have been entertained of the nature and treatment of this disease.

2d. To express our belief that it is essentially zymotic in its nature.

3d. That it is communicable by the attendant as well as by other means, and

4th. To direct attention especially to the value of *Chlorine* and *Bromine*, not only in limiting the spread of the disease, but also as curative agents.

THE ILLINOIS STATE MEDICAL SOCIETY.

COMMITTEE ON DISEASES OF THE EYE.

The Committee would most respectfully request members of the Society and of the profession generally, to contribute the report of important cases, and papers upon any subject in Ophthalmology. The chairman of the Committee would respectfully solicit the record of all facts relating to epidemics of Conjunctivitis in different parts of the State--the condition of the atmosphere and soil, the habits and occupations of the patients, and the severity and number of cases. He would also solicit the history of cases of injury of one eye followed by sympathetic ophthalmitis in the other eye.

E. L. Holmes, Chicago. R. E. McVey, Waverly.
J. S. Whitmire, Metamora. F. B. Haller, Vandalia.

CLINICAL LECTURES ON DISEASES OF THE EYE.

By E. L. HOLMES, M. D., of Chicago,

Lecturer on Diseases of the Eye and Ear in Rush Medical College, and Surgeon of the Chicago Charitable Eye and Ear Infirmary.

THE CHOROID—ANATOMY AND PHYSIOLOGY.

Gentlemen :—The study of this membrane, especially as affected by disease, has been rendered much more satisfactory and interesting by the discovery of the ophthalmoscope. Abnormal changes of the choroid, observed by the aid of this instrument, during life, and further investigated by the microscope, are now much better understood than formerly. The classification of diseases is consequently more scientific and practical. I will endeavor to present to you the most important facts as now established.

The choroid is quite a thin membrane, having the retina on the inner, and the sclerotic on its outer surface. It is divided into two distinct portions. The first is a narrow band two or three lines wide, known as the ciliary body, and is situated in front of the anterior portion of the retina; the second, and by far the larger portion, is situated posterior to this border, and is called the true choroid. Throughout nearly the whole extent of this portion, it is quite loosely attached to the sclerotic and retina. It is firmly joined to the covering membrane of the optic nerve, where this nerve pierces it. It is also firmly attached to the retina at its anterior border or ora serrata. This latter attachment is so strong that the retina may be separated by serum from the choroid and yet hold firmly to the choroid along this border. The true choroid may be divided, according to some microscopists, into five distinct layers: 1st. A layer of pigment lying upon the inner sur-

face of the sclerotic; 2d. A layer of larger vessels; 3d. The capillary layer; 4th. An extremely delicate transparent layer, and, 5th. The inner pigment layer. All these layers together are only 1-30 to 1-20 of a line in thickness.

The substance of the choroid is composed of the star and spindle shaped cells, with their anastomosing appendages, of which I have spoken, in describing the other tissues of the eye. Throughout the whole extent of the choroid, the pigment cells are quite abundant. The inner layer, upon which rests the retina, is almost wholly composed of this pigment.

The ciliary portion of the choroid is a narrow band, thicker at its anterior than at its posterior edge, lying between the anterior border of the retina and the periphery of the iris. Its general structure is similar to that of iris and true choroid, although it possesses less pigment. Its inner surface is corrugated into seventy or more folds, which are a continuation of the corresponding folds on the posterior surface of the iris. These are called the ciliary processes. Like the iris, this portion of the choroid contains two series of muscular fibres, the circular and the radiating, the relation of which to the function of accommodation of the eye to vision at different distances will be explained at a future time. At the ora serrata the true nervous structure of the retina ceases. The retina passes farther forward, however, in the form of a delicate, transparent, almost structureless membrane, which is quite firmly attached to the anterior edge of the true choroid and inner surface of the ciliary processes. As it approaches the periphery of the lens, it divides into two distinct layers, the inner one being attached to the posterior surface of the capsule of the lens, near its periphery, and the outer layer being attached to the anterior surface of the capsule. Between the layers and the periphery of the lens is the canal of Petit. This structure is the suspensory ligament of the lens, and is called the zonula of Zinn. Its function is intimately related to the accommodation of the eye to distinct vision, at different distances.

The choroid is principally supplied with blood by about twenty very minute branches of the ophthalmic artery—the posterior short ciliary arteries, which pass through the schrotic into the choroid near the optic nerve. These arteries supply also a small portion of blood to the ciliary processes and iris. The anterior ciliary arteries, which enter the globe a few lines posterior to the periphery of the cornea, give their blood principally to the ciliary portion of choroid and iris. The two long ciliary arteries enter the eye quite near the optic nerve and pass forward between the schrotic and choroid, one on each side of the globe, to the ciliary band and iris.

There are two series of veins in the choroid, one of which follows the general course of the ciliary arteries; the other is composed of five or six veins, which leave the eye half way between the optic nerve and cornea and at equal distance from each other. Each of these veins receives its blood from a series of smaller veins radiating around it like the spokes of a wheel, which are called the venæ vorticosæ.

The nerves of the choroid are the long and short ciliary nerves, composed of filliments from the third and fifth pair and from the sympathetic. These nerves pass through the substance of the choroid and are distributed almost wholly to the ciliary band and the iris. Some anatomists state that there are microscopic branches and nerve cells supplying the true choroid.

The pigment of the choroid, as also of the iris, is intended to absorb diffused light and thus render images upon the retina more distinct, as for the same purpose tubes of microscopes, telescopes, and the camera of the daguerreotypist are blackened upon their inner surface. Whenever this pigment is less abundant than it should be, as in the albino, vision is almost always indistinct, and the patient is dazzled by ordi nary light.

The iris, ciliary band and true choroid, sometimes called the sweal tract, may be considered as parts of one organ, the

common function of which is the nutrition of the intraocular tissues. In addition to this common function, the iris, as we have seen, regulates the amount of light which enters the eye, and the ciliary bodies and zonula and zinn change the focus of the eye as it is fixed upon near or distant objects. The precise manner in which this process of nutrition is performed is not in all respects well understood. The aquious humor is undoubtedly the product of the iris and ciliary bodies. Diseases of the choroid often produce opacities of the lens and vitreous humor, and long continued inflammation of this coat of the eye is certain to terminate in atrophy of the globe. Diseases of the choroid, therefore, become of great importance to the student of ophthalmology.

An accurate diagnosis of these diseases often requires the assistance of the ophthalmoscope. For this reason you should bear in mind the normal appearances of the choroid as seen with this instrument. The rays of light reflected by the ophthalmoscope upon the transparent yet quite vascular ritina and the pigment layer of the choroid gives the characteristic yellowish red color of these tissues. The vessels of the choroid are usually covered by the pigment layer, and of course are not seen. In the negro, and individuals with dark skin and hair, the choroid contains more pigment, as seen by the darker shade of color revealed by the ophthalmoscope. In the albino, and individuals with light hair and skin, the color is much lighter, and there may be so little pigment that the choroidal vessels may be seen as broad, yellow lines, beautifully curved and looped together.

It should also be remembered that old age, as it removes the pigment matter from the hair and wrinkles the brow, often produces alterations in the ophthalmoscopic appearances of the choroid. The most frequent change is the absorption of pigment in irregular patches, which thus assume different shades of yellow brown. Not unfrequently in these cases, pigment is found in abnormal quantities scattered irregularly in small spots in different parts of the choroid.

TYPHOID FEVER IN THE 42D WIS. INFANTRY,

STATIONED AT CAIRO, ILLINOIS.

By GEO. D. WINCH, Surg. 42d Wis. Inf.

It has been four months since the enlistment of this Regiment, and they have been stationed at Cairo most of the time. The men are mostly farmers, of good constitution.

I first see these cases when brought to the hospital, and on examination discover the following symptoms: They have had one or two days of feeling chilly, very weak in the limbs, with some pain in them. Nearly one quarter of the cases have a severe headache that remains three or four days and then passes gradually away. This symptom does not otherwise change the character of the disease. Pulse averages from 90 to 120, and soft. Frequently no inclination for sleep the first two or three days; often detect tenderness over the abdomen in this early stage. At the expiration of four or five days there are two directions for the disease to run.

One class continues a mild course, pulse never rises above 100, no delirium, tongue moist, secretions of the kidneys and intestines are nearly normal, except a slight alkalinity of the urine, which I will soon notice. If sordes collect on the teeth they will soon abandon their illegitimate situation. After continuing in this condition for two or three weeks, the light abnormal symptoms clear away by degrees and the patient in a very short time is able to be returned to duty.

In the other and more severe grade, the pulse continues to increase in frequency until it rises to 110 or 120, very seldom 130, becoming weak and thread-like; the tongue coated, dark and dry, many cases fissured, and in a still less proportion swollen. The skin of the feet and hands dry and scaly; tremor of the muscles on moving. Extreme deafness in many cases, and frequently a thin discharge from the ears, amounting to three or four ounces in twenty-four hours. Delirium consists of a low, unconscious muttering. In but very few cases flaccitation. Between the sixth and tenth day of the

disease a cough commences, accompanied by expectoration. Auscultation detects crepitation with sibilus. These pulmonary symptoms are frequent, and gradually clear away sooner than the other symptoms. Bed-sores have been unusually frequent and severe; the sensibility frequently blunted.

I have closely watched for eruptions in all its stages. The only class I was able to discover was sudamina; they were two lines in diameter, containing a white, thin fluid, had no red bases. By passing the hand over them it produces a feeling of roughness. They are present in one-third of the cases of this kind, commencing near the fifth, and lasting from six to nine days, and then dry away leaving the surface in a scaly powdered condition. The perspiration was more free in the cases with the eruption than those without it. From the 14th to the 20th day, sometimes much later, the symptoms commence improving.

Pulmonary symptoms, which commence after the disease has begun, disappear first. The urine at the commencement gives alkaline reaction to test paper, in nine-tenths of the cases, continues so through the disease, unless changed by the free use of acids. Its specific gravity was found much below that of normal urine in a very few obstinate and long-continued cases. It did not coagulate by the Nitric acid or heating test.

Treated thirty-three cases, lost one. On examination of the abdomen found the small intestines of a slate color; the lower portion of the ilium filled with a dark substance, about the consistence of mucilage, evidently more or less blood; the mucous coat of the whole tract of the ilium was thickened and congested. Ulceration was confined to the last five inches of the ilium, in which were found four ulcers, about three lines in diameter, which had destroyed the mucous coat. Kidneys and liver had a healthy appearance; the omentum healthy; thorax not examined.

Although there is so much liberal writing on the treatment of typhoid fever, it is difficult to find a guide in all cases. In this disease, as in many others, the celebrated prescriptions

extolled by distinguished men will not perform the work they are intended to execute, especially among troops that *frequently change their location.* Judging from the alkalinity of the urine, and observing that those patients whose urine gave the strongest alkaline reaction, were the most dilatory in their recovery; and those that had a relapse were the patients that had alkaline urine when they left the hospital, and when they returned, I came to the conclusion that the remedies should be acid, and the practice has decided the virtue of the theory. The cases that come under the first class will do well without much treatment. Give a small dose of some alcoholic stimulant after meals, beef-tea every three or four hours. If necessary, an opiate to quiet wakefulness, and stimulating expectorants for the lung difficulty; also mur. acid, dil., gtts. xv, three times a day.

But the second class, where the urine is obstinately alkaline, and other symptoms severe, require more meddlesome treatment. Give dil. mur. acid, m. viij, as frequently as once in three or four hours, combined with tinc. opii in small doses as nervous symptoms arise. Let the patient occasionally have a drink of solut. bi-tart., chlor., or bi-carb. pot. As pulmonary symptoms exhibit themselves, combine with other remedies, fluid ext. seneka in moderate doses, and here again will the opiate be a useful auxiliary. I find sul. quinia, given in from one to two grain doses, four or five times a day, combined with the other remedies, to be useful. *Give it for its tonic effect.* The mur. tinc. of iron, with tinc. gent. comp., has worked admirably in those cases that were anæmic, not omitting the mur. acid. But I am confirmed that it is not so useful for a tonic, except in *those* cases, as quinine. In a large proportion of cases it has been necessary to move the bowels with gentle cathartics. After a trial of different methods of treatment, I find patients recover in less time, are not as liable to relapse, and the pulmonary symptoms less severe, in those cases where the mineral acids have been used, in combination with the other necessary treatment.

AMERICAN MEDICAL ASSOCIATION.

The Committee of the American Medical Association, to which was referred, at its late annual meeting, the subject of "*Spotted Fever—so-called,*" earnestly solicits from members of the Profession, in different parts of the country, information respecting the history, phenomena and treatment of this disease, as it has come under their own notice.

As it is desirable to learn the geographical distribution of this disease, intelligence respecting it, from physicians residing in distant States, and from Medical Officers of the Army, is particularly requested.

For the sake of uniformity, the following questions have been prepared. Any matters not included in, or suggested by them, will, with the answers themselves, be gratefully appreciated and acknowledged by the Committee.

Address the Chairman of the Committee.

DR. JAMES T. SEVICK,
1109 Arch St., Philadelphia.

1. When did "Spotted Fever—so-called," appear in your neighborhood, and how long did it prevail there?
2. What were the usual symptoms of the disease, and what unusual symptoms occurred in your practice?
3. Did it attack many individuals at the same time, and was it materially modified by the age, sex, or temperament of the patient?
4. What was the ordinary duration of the disease, and were relapses or second attacks common?
5. Are you in possession of any proof that the disease was communicated from one person to another?
6. What appeared to be the predisposing, and what the exciting causes of the disease?

7. What complications, and what sequelæ of the disease came under your notice?

8. What other diseases prevailed at or near the time that Spotted Fever did, and what epidemic diseases followed it?

9. What was your mode of treating the disease?

10. What was the proportion of deaths to the whole number of persons attacked, and what was the usual manner of fatal termination?

11. What were the *post mortem* appearances?

12. Were any microscopical observations made, and what were their results?

13. Has this disease prevailed in your neighborhood in former years?

SELECTED.

SCABIES.

[Read before the Boston Society for Medical Improvement, and communicated to the *Boston Medical and Surgical Journal.*]

By JAMES C. WHITE, M. D.

In the days of our fathers scabies was a diseases of frequent occurrence and was the pest of the village school, but it gradually died out under more cleanly ways of living, until in our generation it has become so rare that many physicians do not recognize it even when called upon to treat it. The frequent mistakes in diagnosis which arise through this want of familiarity, the importance of the immediate recognition of its existence in a family, and its marked increase among us within a few years, lead me to ask the attention of the Society to some points connected with its nature, diagnosis and treatment as they were observed by me in the clinic of Prof. Hebra.

Three forms of the itch insect are met with upon the skin, viz., the female, male and young. The mature female is discernible with the naked eye as a speck, 1-4 line in length and

1-6 line in breadth. It is of a white color, and resembles in form a tortoise shell, with an arched back and flat belly. The male is only half the size of the female, and, until recently discovered and described by Boeck and Danielsson in cases of Norway itch, was unknown. In structure it differs but slightly from the female. * * * * It is not white and shining like the female, but black and compressed. The young possess but three pairs of legs, and in them no distinction of sex is noticeable. In order to become mature they undergo, according to some writers, three metamorphoses; according to others, only one. Whether all these changes are essential or not, it is at least a fact that the six-legged form may be found containing within itself a visible eight-legged one. After maturity the females cease to creep over the surface of the skin, and remain in new burrows till sought after by the males. One coitus must suffice to impregnate the entire ovary of the female, for after copulation she burrows deeper and deeper, and forms the long burrows to be more particularly described hereafter. The male never enters one of these true burrows where the eggs are found, but digs himself a shallow cell or seeks new fields for his sexual rambles. The female goes on her downward course obliquely through the epidermis, and leaves behind her each day a new laid egg and masses of fæcal matter. The direction taken must necessarily be oblique, for otherwise the rapid increase of the epidermis from below upwards and discharge of effete superficial layers would allow the escape of the eggs before the proper time. After 14 are thus deposited, the larva of the oldest, which has been gradually pushed up from below, becomes mature, and emerges from its birth-place through the opening made by the mother to undergo the processes above described, leaving behind its broken egg-shell. All stages of development may be witnessed in these eggs, from the amorphous form in which they are deposited, through segmentation, to the perfect young before it breaks its prison. The old female never leaves her hole, and sometimes wanders along for four inches beneath the surface. Fifty eggs and broken shells are sometimes counted in such burrows, although they never contain more than 14 larvæ at one time. If, however, a pustule should be formed the eggs are destroyed, but the female emerges at the surface near the edge of the pustule, and commences her descent anew. The whole time required for the young to reach maturity after impregnation is estimated at six weeks. How long the female may live is not known, but she probably dies at the extremity of her burrow after depositing all her eggs.

The symptoms produced by the presence of these minute animals are of two kinds—the direct or primary, those caused by the animal itself, and the indirect or secondary, those produced in consequence of the scratching. They are both subjective and objective.

The Primary.—We have already seen that the appearances on the skin must differ according to the age and sex of the parasite. The young and males make only a little pit or short burrow for purposes of metamorphosis or nutrition, and at most give rise to the formation of a minute vesicle. It is the impregnated female only which produces the characteristic pathognomonic sign of scabies, the burrow for the deposition of her eggs. These burrows, when closely observed, are found to be linear elevations, running an irregular course, with an uneven surface corresponding to the situation of the eggs within, and terminating at one extremity in a marked prominence, which is the old one at work. Bourgignon considered these irregularities of surface to be caused by openings in the course of the burrow through which the female emerged at night; but, as already stated, it is known that she never leaves her hole, and microscopic examination shows the eggs lying with the long axis perpendicular to that of the tunnel, and that no such communication with the surface above exists. It reveals, also, the presence of numerous reddish brown globular masses scattered throughout its whole length, which are the fæces of its inhabitant. In persons of cleanly habits the burrows are generally distinguishable by their white color, but in classes among which scabies most commonly occurs, they are mostly stained of a darker tint than the surrounding epidermis, from the absorption of dirt and coloring matters. In length they vary, averaging generally from one or two lines to half an inch, but in exceptional cases they may stretch out to three or four inches, although the eggs are much farther apart in such instances, as the number in each individual is probably limited to 40 or 50. The direction they take is slightly zigzag or curved, seldom perfectly straight. When fresh, a small vesicle often marks the point of entrance of the animal, and in other instances the whole burrow is lifted prominently above the surface by the exudation excited beneath it, which may be converted into a pustule and thus destroy the embryos. In rare cases a large papule may be formed beneath the burrow, over the summit of which it may be seen to run. The entrance of the tunnel generally remains open for the exit of the young and for the admission of air. When

the disease has existed for a long time they may run into each other, or secondary appearances may show themselves, which obscure the typical forms and present to an inexperienced eye no sign of scabies.

As to the *subjective* symptoms produced by these minute creatures, the plain Saxon name of the disease indicates strongly enough their nature. It is *the Itch.* The sensation experienced by the patient is produced in a degree only by the old female. It is the depredations of the young and males rambling at will over the surface of the body and boring at random into the deeper and senstive layers of the epidermis, or into the upper surface of the papillary structure, which produce an itching so intolerable as to make a resort to scratching an imperative necessity. The scratching, when once excited, however, is not confined to the local irritation of the affected spot alone, but, owing to the intimate connection existing between the sensitive cutaneous nerves and the pleasurable sensations thus produced, is converted into a general application of the nails to large surfaces of the surrounding skin.

This itching, which is a primary and subjective symptom, leads us from cause to effect, to the *secondary* phenomena of the disease—the eruptive appearances of scabies. It is only necessary to assume that scratching is capable of producing upon a person harboring a colony of sarcoptes the same appearances as upon the skin of anybody else, and we may account for all the objective symptoms of this affection, with the exception of the burrows already described, without being obliged to consider the possibility of any such absurdities as a psora dyscrasy or the absorption of the irritating fæcal matter of the insect. Let any one scratch himself roughly on the breast or thigh and study the result. We first see broad red lines corresponding to the irritated parts; this is erythema. The follicles then begin to swell up in consequence of the exudation, or, in other words, a papular eruption appears. Carry on the scratching farther, and we cause an excoriation and hemorrhage, by which the tip of each papule is colored black by the dried blood, as in prurigo. Again, if we scratch or interfere with the process of an exudation, what is the result? a pustule appears. It is incorrect, then, to say that such and such forms of eruption are caused by this animal. It has nothing at all to do with them, except to cause an itching, from which they all result. The eczema and vesicles, papules and pustules are wholly caused by our nails and our clothes, and

not by the parasite. In individuals who can not scratch, no such forms are met with. In the beginning of the disease the itching is very slight, but after a fortnight has passed, and the young are beginning to emerge and colonize fresh portions of the skin, it increases in intensity, and leads to more frequent indulgences in scratching, in consequence of which red spots or papules appear about the openings of the hair follicles. By the third week the itching has become so intense as to be no longer satisfied by superficial friction, and excoriation and a pruriginous eruption, tipped with bloody caps, bear witness to the execution effected by the nails. Finally vesicles, pustules, patches of eczema rubrum, and ecthyma, and depositions of pigment follow, and in some cases the extremities may be covered with crusts of the size of a copper cent, and with pigment spots, the seats of old scabs, which might be mistaken for syphilis. The eczema and pustules are at times sufficient to cause the neighboring lymph-glands to swell. These appearances are confined to certain regions of the body, as the chest, abdomen, thighs, and hands, not the parts where the burrows are in the greatest abundance, nor are they in proportion to their number, but those which are most easily accessible to the nails. Upon the neck, back, shoulders, and lower extremities very little eruption is found. Wherever constant pressure is made, there the appearances will be exaggerated. Those who sit all day, as shoemakers, tailors, and others, have the pustules and papules most developed on the buttocks, just as occurs in the axillæ of those who walk with crutches, and about the waist and under the garters of women. The appearances which the surface of the body presents in those who have had the itch a long time are most variable, and even long after the cause has disappeared, we may find an eruption which would serve as a model to illustrate almost every form of cutaneous disease.

A peculiar variety of scabies is met with in Norway, which is distinguished by the formation of huge crusts upon the surface of the skin like rupia, and by the presence of the parasite upon the face and even beneath the nails. Its frequent occurrence in that country and its rarity in other places, only some half dozen cases having been observed elsewhere, has led to the supposition that the disease was caused by some peculiar form of acarus, but Hebra has shown that the crust consists of dried epithelium, dead sarcoptes and their fæces, and that beneath, the whole epidermis is undermined by the swarms of animals, adults of both sexes, and young, living

without burrows, which are identical with the ordinary variety. It was in such social colonies that the male was first discovered and described. This form leads often to serious complications, as immobility and great swelling of the limbs, as in elephantiasis, with severe pain and inflammation, and is at times confined to a circumscribed part of the body, while the rest of the surface is affected in the usual way. We seek in vain for a satisfactory explanation of this form of the disease. Hebra thinks that great uncleanliness and indifference may be the cause, but the fact that it often affects parts usually exempt, is opposed to such an opinion. Küchenmeister thinks that some endemic influence or constitutional peculiarity alone can explain the greatly exaggerated exudative process. It yields as readily to treatment as the ordinary forms.

Diagnosis.—We see, therefore, that scabies presents a varied combination of appearances capable of misleading any one who does not carefully analyze them. We must always bear in mind the importance of recognizing the primary phenomena of the disease, which furnish positive evidence in any particular case. We can not, therefore, make ourselves too familiar with all that pertains to the habits of the sarcoptes and its marks upon the skin, and even at the risk of repetition we shall explain the means to be employed in our examination. As has been remarked, the favorite spots for the burrows are the commissures and lateral surfaces of the fingers, the hands, penis, nates, feet, and folds of the axillæ, and in women the breasts, while in children we may find them equally distributed over the whole surface of the body. They may affect any part of it, in fact, except the head, although Hebra has cultivated them upon the face and scalp. It is the hand of the patient we first take up to examine, if we suspect the presence of scabies, for the collection of foreign matter, with which they continually come in contact, colors the burrows of a dark tint. If, therefore, we see streaks or spots which resemble such a burrow, we have only to rub it with some dark coloring matter, as ink, and then endeavor to wash it off, and if we really have to do with scabies we shall find that the pigment has penetrated beneath the epidermis and can not be removed. If we fail to find the burrows on the hands, for owing to some occupations these are at times an unpleasant dwelling place for the sarcoptes, we should examine the penis, where, from the yielding nature of the tissues and the undisturbed quiet, we find the most perfect specimens of animals, eggs, and burrows, or, in a person of sedentary

habits, the buttocks. The specimen exhibited to the Society was snipped from the glans with a fine curved scissors by Hebra. This may be done without much pain to the patient, for it is not necessary to go deeply to cut out the whole burrow and animal intact. In persons who suffer from cold hands and feet we often find these parts entirely free, while the rest of the body may be covered with the eruption. This is corroborative of their love of heat, and when a person lies habitually on one side in bed, we sometimes find that side of the face affected, while that exposed to the cold remains untouched. Another exemplification of the same law may be seen in the immediate relief which a patient, wrought almost to frenzy by the itching of a general scabies at night, finds by jumping out of bed into the cold atmosphere of winter. The animal is best obtained from its burrow in the way above mentioned, or we may open the elevated track with a sharp knife or needle, and find it at its extremity. The males may be found with a lens upon the surface of the body, near the burrows of the females, or slightly embedded in the skin, appearing as a dark point. The young are generally found in fresh vesicles or in the epidermis undergoing their metamorphoses. We may often detect the lurking place by rubbing the suspected spots with German soap, and in twenty-four hours an exudation will follow and elevate the burrow. In this way we may often settle doubtful cases. By transporting a colony to one's arm the customs of the animal may be easily observed with a lens, and we see that they seldom or never go below the epidermis. In order to enter this, the acarus supports himself on his anterior end by means of its long posterior bristles, and works away with its lobster-like claws. It usually takes one-fourth or one-half an hour to penetrate the outer integument, but this once pierced its progress is more rapid. When coming in contact with the nerve papillæ it causes a stinging sensation. The poorer in nutriment the epidermis, the deeper it penetrates, and the greater the exudation caused, which lifts up the animal and gives the white color to the hole. The young brood seems to require the tender and last-formed epidermal layers for its food, and therefore bores deeper and produces more itching and exudation. When wandering about on the surface they produce no exudation whatever, but on the genitals and upon infants, where the epidermis is very thin, they are obliged to go deeper, whence the large exudation which ensues in such cases. It is a commonly received opinion that the parasite is to be found either within a vesicle, or, as it is said, a

little way from it, without any apparent reference to the existence and importance of the burrow. In the majority of cases the vesicles have no connection with the position of the animal, and in the exceptional cases contain only the young, or are situated at one extreme end of this canal, while the game hunted is at the other.

Wilson has added to this confusion by giving, as one of the important diagnostic signs of scabies, "a peculiar scaliness and undermined state of the epidermis," from beneath which the animal may be extracted. This scaliness we have never observed, but we should literally as soon think of looking for a needle in a hay-mow as to attempt to extract an acarus until we had found a burrow, and a fresh one. In case none such can be found, we may still hope to obtain the proof we seek in the dried eggshells and fæcal masses the old burrows contain; or if this opportunity even is wanting, we may perhaps be fortunate enough to chance upon a vesicle which contains the young or a portion of its cast skin. Neither can we understand why it is that this writer should make the extraordinary statement that "one of the most remarkable phenomena of scabies is the localization of the acarus to the hands, while the eruption excited by it may be spread more or less extensively over the entire body." This is quite as incorrect as many of his statements with regard to vegetable parasitic affections. It is true that among the favorite lurking places of the animals are the folds of the skin between the fingers, for there they find the conditions of warmth and moisture they prefer; but, as we have seen, they affect as well the penis, folds of the axillæ and nates, and were we in search of a specimen we should turn first to these latter regions, where the burrows are less interfered with. Cases occur, however, and not unfrequently, where from the peculiar situation of the disease, or from interference either by the patient or by treatment, all immediate signs of the presence of the animals are wanting, where no burrow, fresh or dried, and not even a vesicle is to be found. Are we, in fact, able to recognize scabies by any peculiarities in the gross or secondary appearances? In the great majority of cases we are. We should examine carefully the whole body, notice the locality and character of the eruption, the appearances about the hands and feet, upon the penis and upon the nates, and if we have once thoroughly studied and understood the little peculiarities which give individuality to the multiple appearances of the disease, we shall readily recognize its nature, even when

complicated by the simultaneous occurrence of an eczema or other cutaneous affection. We strongly insist upon the necessity of a careful attention to all these points, so important in diagnosis, on account of the great number of cases in which no other signs are present, and the frequency with which mistakes occur in consequence. We have repeatedly seen cases of well-marked scabies treated for a long time as some other disease, in which typical burrows were staring the physician in the face all the while, and again others which were equally unmistakable on close examination, though not so striking, called lichen or prurigo, when the microscope revealed the presence of the parasite. There is, in fact, an indescribable expression in the features of a case of scabies which can hardly be mistaken by any one who has once had the opportunity of seeing a large number of patients known to be affected with this disease. In cases of very long standing, or when confined to the hands, all specific appearances may be merged in those of chronic eczema, so that we may only suspect, not feel entirely sure in our diagnosis. In such cases we should always adapt our treatment to our suspicions, and at least remove all doubts with regard to the future character of the eruption by the application at once of our parasiticide.

Ætiology.—Scabies is found all over the world, but who had the first sarcoptes is a question not easily answered. It may have originated by transference from some other animal, for the same species is found parasitic on camels, lions and other animals in menageries, although it may have been man who affected the brute in such instances. We know that the mange of domestic animals, as the horse, pig, dog and cat, is capable of producing upon the skin of their keepers appearances similar to those of true scabies, but these are never of long duration, and yield much more readily to treatment than those produced by the sarcoptes hominis. We never see here in these days such cases of scabies as are met with in a European hospital. In Germany the old system of apprenticeship and its attendant wanderings through the land is still kept up, and in this way the disease is borne from one part of the country to another. Master workmen have generally but one bed for four apprentices, and the linen is seldom if ever changed. Scabies until recently has been comparatively rare here, although it has sometimes run through a school or an orphan asylum, or found its way into a good family, the young lady members of which often bear it about for a long time before suspecting its true nature. Of late

years it has been quite largely introduced into the country by the crowds of immigrants which pour into our large cities. Every ship that arrives with such a freight brings scores of fresh cases of the disease, which spreads rapidly during the voyage, owing to the close quarters and want of cleanliness, and which serve as so many new centres of contagion wherever their inmates settle. The child carries it to the school and gives it to its playmates, and the older girl communicates it to the children or fellow servants at the place she takes. We have recently known an instance where it was started in a small manufacturing town but a few miles from Boston, and was introduced into a large number of families before its real nature was understood. Returned soldiers bring it frequently with them from the camp, and leave it behind as a constant reminder of their furlough. The mode of infection consists in the transfer of individuals from one host to another. This is accompiished in the majority of cases, without doubt, by the young and males, for, as we have seen, the mature female never leaves her hole. The acarus is an animal which loves the warmth, and on this account has been called nocturnal, but without good reason. The wandering and activity are excited only by the warmth imparted to the body by lying in bed, by sleeping with others, and by dancing, when hands are freely interchanged, and thus it is that the parasites are conveyed from one person to another. The nurse gives it to the child by placing her hand beneath its little nates, and so bearing it about. It may also be conveyed by wearing the clothes of any body afflicted with it, for both eggs and insects possess an obstinate vitality, and may exist months without food. It may happen occasionally that the old animal is scratched from its hole and thus transferred to another part of the same host or to a bed-fellow. We see, therefore, why it is that in some cases a person exposed to the disease may not exhibit any other symptoms than a solitary unnoticed burrow for weeks, until the young begin to make their appearance upon the surface, whereas in other cases the transference of the affection may be accomplished by several young or males, which begin their provoking rambles at once and cause an immediate eruption. It is this circumstance, principally, which determines the so-called period of incubation, and not, as Mr. Wilson says, the particular temperament, climate, season, age, confined air, etc. Scabies is seldom, if ever, caught by handling patients, however freely this may be done, and physicians and nurses are seldom infected. In one instance only, and

that on an intensely hot day, did I ever see infection follow thousands of such contacts between patient and student. There must be many cases, however, where such transfer takes place without any result, for should several males or an unimpregnated female alone be conveyed to a fresh skin no general scabies would follow.

Treatment.—The chief indication in the treatment of scabies is of course to destroy the insect and its eggs, if possible. Any means which will accomplish this without injury to the skin and in the shortest time, is of course the best. The use of internal remedies belongs to the days when a belief in a dyscrasy prevailed, and nothing need be said about it. It will be needless to mention all the numerous remedies which have been used at various times and among different nations. Nearly everything has had a trial, but the remedy to kill the eggs as well as the insects is yet to be discovered. Among them all, one substance has attained a reputation which has made its use universal. Sulphur in some form, as a gas, as an acid, as a salt, in form of bath, or ointment, or tincture, either alone or mixed with other substances, is employed all the world over. There is, however, a great difference in the effect of the various preparations both upon the patient and upon the disease; and a knowledge of these effects is essential to a proper selection. Sulphur baths once employed, required weeks to produce any permanent effect, and were extremely disagreeable. Still less can be said in favor of the sulphur vapor bath, which, when used of sufficient strength to produce the desired results upon the parasite, usually causes so extensive an eczema as to require weeks of after-treatment for its removal. Simple sulphur mixed with fat (sulphur ointment) rubbed thoroughly into the skin, will in time cure the disease, but the process is a long one, and, when pushed to the extent to which the English use it, seldom fails of causing an artificial eczema. A more rational plan is to add to the preparation some substance which will more speedily remove the outer layers of epidermis, and allow the sulphur to come in direct contact with the animal. Such a substance is an alkali, and this combination in some form is at the base of all the various remedies and cures of the day. Among these, perhaps, Helmerich's ointment is the best, and it is this preparation which is employed by Hardy in his quick cure at San Louis Hospital. The original formula is:—Sulph. flor., ℥ ij.; pot. subcarb., ℥ i.; adipis, ℥ viij. Hardy uses lard, 300 parts; sulphur, 50 parts; and subcarbonate of potash, 25 parts; and

his whole treatment lasts but an hour and a half. For the first half hour the patient is rubbed from head to heel with soft soap; during the second he is kept in a warm bath, and the third period is devoted to a universal friction with the above ointment. Bazin uses Helmerich's ointment unchanged, but employs two frictions instead of one. The patients are immediately dismissed, and are not again seen. In the majority of cases the quick cure is sufficient to overcome the specific character of the affection, but it by no means cures the other appearances which form so important a part of scabies, and relapses will frequently occur, for it is not easy to remove every egg at once. Three or four days is a much safer period to keep the patient under observation and treatment.

Another improvement suggested itself to Wilkinson, in the addition of some substance to prevent and heal the eczema by the use of sulphur in the above preparation, and some gritty matter to render the friction more effectual, and he accordingly added tar and chalk in the following formula:—sulph. venal., ol. fagi, sapon. domest., adipis, aa libram; cretæ, ℥ iv.; ammon. hydrosulph., ℥ ij. This ointment was modified by Hebra by the omission of the last ingredient as useless, and by a diminution in the quantity of sulphur to lessen the tendency to eczema, and for a long time he treated most successfully the great number of patients under his charge with the following preparation—sulph. venal., ol. fagi, aa ℥ vi.; sapon. viridis, adipis, aa libram; cretæ, ℥ iv. M. In cases where fat could not be employed, a more cleanly tincture was made by substituting alcohol to the same amount for the lard in the above formula. The action of this combination of remedies may be thus explained. The alkaline soap, assisted by the mechanical action of the chalk, removes the external layers of epidermis and opens the burrows, the sulphur acts as a parasiticide upon the animal, and the tar prevents the eczema, while the alcohol carries into the parts most deeply affected these active principles. The method pursued by Prof. Hebra until quite recently was as follows: The patient is put into a warm bath, where he remains for half an hour. Then a piece of coarse blanket is smeared with sapo viridis, and with it every finger and portion of the surface must be thoroughly rubbed. This is to be washed off in the bath and the skin to be dried. Then the ointment or tincture is thoroughly applied to the whole body, or in slight cases to the parts affected only, and the patient is carried to a warm chamber, where he remains until the next day, when the same

process is repeated, and this treatment is pursued until itching no longer exists. Three baths are all that are allowed, unless many pustules are present, when more will be beneficial. The patient can be treated in this way at evening and continue at his work by day. In mild cases and tender skins, the modern sulphur soaps will be found of benefit, or we may use for ladies the following preparation introduced by Bourgignon: Ol. lavend., ol. menthæ, ol. carophyl., ol. cinnam., aa ℈i.; gummi tragacanth, ʒi.; potas. carb., ʒi.; lac. sulph., ʒiij.; glycerine, ʒvi. M. Within a few years, however, Professor Hebra has employed the Vleminckx solution entirely in the treatment of this disease. This method was introduced by the Surgeon-General of the Belgian Army, and its effect was found to be so satisfactory as to lead to its trial with the most eminent success in other cutaneous diseases. The formula for its preparation is as follows: Sulph. flor., ʒij.; calcis vivæ, ʒi.; aquæ, ʒxx. Boil till ʒxxi. remain, and filter. We obtain in this way a clear orange-colored liquid, the expense of which is but very little. We get, accordingly, the necessary alkaline action, combined with the sulphur in a penetrating form, and the result is all that could be desired. The only objections to its use are its irritating effect and unpleasant odor, but the necessity for its use is limited to so short a period that they amount to little. It is applied in the following manner: The patient must rub his whole body thoroughly at night with a flannel cloth wet with the solution for half an hour. He then takes a warm bath of an hour's duration, during which the sulphur is washed from the skin, and subsequently a cool sponge bath of pure water. An application of some fatty substance or of a thin solution of oil of cade may be used if necessary.

One or two repetitions of this process will be sufficient to cure the most severe cases of scabies. We have employed this method of treatment repeatedly, and have never known the itching to fail to disappear almost entirely after the first application; but should it return at any spot, subsequent treatment may be confined to this locality.

Whichever of these three most deserving methods—that of the Helmerich's salve, of the Wilkinsonian ointment or tincture, or of the Vleminckx solution—we choose to employ, we must remember that there remains to be treated the secondary eruption, after the parasitic element has been eradicated. In mild cases it will disappear of itself, but in the severer and long standing forms it is necessary to apply the same princi-

ples of treatment which were mentioned in connection with eczema. We must also bear in mind the fact that a continuance of the specific treatment, after it has fulfilled its object, may of itself provoke appearances which the physician only creates while endeavoring to cure. The after treatment of scabies consists of an avoidance of all past sources of contagion and of baking in an oven the clothes previously worn.

CHANGES IN THE KIDNEYS FROM LEAD POISON.

M. Lanceraux maintains that in the elimination of this poison a change altogether peculiar is produced in the kidneys—a true Bright's disease. The author alludes to cases of fatty degeneration of the kidneys in poisoning by phosphorus, by the acid nitrate of mercury, and by sulphuric acid. In the latter case he observed that "the cortical substance of the kidneys, of about normal consistence, was dotted with red. In the field of the microscope, there was absence of fat in the tubuli, but destruction of most of the epithelial cells, which formed a finely-granular grayish mass. The walls of the canaliculi appeared intact, but the interstitial connective-substance was altered, and in course of proliferation (nephritis)." The author says that the renal affection co-existent with lead poisoning is not a simple coincidence—that he has always found its characters very analogous, if not identical. He thus sums up the results of his investigations in three cases:

There was, 1st, an advanced stage of lead poisoning, with cachexy; 2d, a lesion of the kidneys, always characterized by inequality of their surface; atrophy of their cortical substance; hyperplasy of the connective substance; destruction, or even the disappearance of the cellular elements, with albumen present in the urine. This renal affection only succeeds to an advanced stage of lead disease.—*Am. Journal of the Med. Sciences*, from *Brit. and For. Med.-Chir. Rev.*, April, 1864, from *L'Union Médicale*, Dec. 15, 1863.

EDITORIAL AND MISCELLANEOUS,

COMPOUND, COMMINUTED, COMPLICATED, AND IMPACTED FRACTURE OF THE RIGHT FEMUR,

At Junction of Upper with Middle Third—Secondary Hemorrhage—Ligation of Femoral Artery one and a half inches below Poupart's Ligament—Recovery.

By A. J. BAXTER, M. D., of Chicago.

A recent writer says, "No humane, enlightened, and conscientious surgeon will ever resort to amputation without being satisfied of its entire and perfect necessity." Such a statement at first sight might seem superfluous, but when it is remembered that limbs have been sacrificed for selfish motives; for the glitter of operation, or to save time and trouble in subsequent treatment, we are not so much astonished, but rather blush for shame.

But the case is quite different when a member has been crushed by the passage of a railway car, or heavily-loaded wagon, or fall of an embankment. Here there is no debatable ground; but one alternative—amputation. Even under these circumstances it is a sad thing to lose a limb, but it is infinitely more deplorable to die; yet I have seen one instance where the unfortunate preferred to die with four limbs than to live with three.

The following case is interesting in several particulars:—1st, In embracing nearly all the varieties or general division of fractures. 2d, In being attended by rupture of the femoral vein. 3d, With secondary hemorrhage.

John L——, shipping clerk, æt. 40; active and stout. Nov. 1st, he was engaged in loading a barrel of flour into an express

wagon, when from some cause, the horse took fright and ran. Acting on the impulse of the moment he ran and caught the horse by the bridle, but was unable to maintain his hold, fell under the horse, was trampled on, kicked, and passed over by the wheels of the wagon. Finding himself unable to rise he was picked up by those who witnessed the accident, and carried into the store in which he was employed, and that skillful surgeon, Dr. Daniel Brainard, summoned, but being otherwise engaged, very kindly referred the case to me, for which I now tender my thanks.

On my arrival at his place of business I found him propped up against the wall, and remarkably composed for one who had just gone through what the bystanders said was "enough to kill forty men." The proper mode of procedure was so apparent that I informed him as soon as possible without appearing hasty, that it would be necessary to amputate the limb, which seemed to surprise him so much that he requested me to defer the operation until he could see his family physician, to which I readily consented, and gave direction to have him taken home in a hack immediately. Having obtained several assistants I repaired to his residence and found the family physician had not arrived.

On examination he was found to be very much prostrated, and the limb enormously distended with diffused blood. As his condition was rapidly becoming more unfavorable, immediate amputation was urged by all present, yet he seemed to think it not necessary. Finally the family physician came and assured him amputation was necessary; he was satisfied.

After being brought under the influence of chloroform, and the femoral artery compressed by the thumb of an assistant, the limb was amputated about 2 inches below the trochanter minor, by the circular method.

Although the operation was performed with all the celerity I possessed, compatible with safety, it was thought he would expire before its completion. On dividing the integument and muscles a perfect deluge of blood gushed out, which had es-

caped from the femoral vein. At this moment rapid sinking supervened. Why the escape of this confined blood should produce such a rapid and alarming prostration (if it were the cause,) is somewhat of a mystery to me. Physiologically the blood had ceased to be subservient to the wants of the system.

The operation completed, stimulants and hot broths were given, and artificial warmth applied, under which he gradually rallied, and by 9, P. M., (eight hours after the operation,) he was as comfortable as could be reasonably expected.

From this time he rapidly improved, and everything wore a cheerful aspect until the 14th day, when all of a sudden and without any assignable cause, secondary hemorrhage supervened. On my arrival the hemorrhage had ceased; he was very much agitated, pale, and bathed in a cold, clammy sweat, and constantly asking for water. The stump was distended with coagulated blood, which extended up the inside nearly as high as the pubis. Judging from appearances he must have lost between eight and twelve ounces. What should be done? So far as the present was concerned everything was safe, but how about the future? Mr. Guthrie says, "There is no precept more important than that which directs that no operation should be done on a wounded artery, unless it bleed, inasmuch as hemorrhage once arrested, may not be renewed, in which case any operation must be unnecessary." This is very true, so far as the hemorrhage is concerned, but is this all there was to fear? I think not. The tissues contained a large amount of coagulated blood, which communicated with the air; decomposition must take place; gasses be evolved and absorbed, producing pyæmiæ, or more properly speaking ichoræmiæ, and a typhoid condition more to be feared than the hemorrhage; and as there was no certainty that hemorrhage would not recur, I decided to open the flaps, turn out the coagulated blood, and search for the faulty vessel; but in spite of all that could be done consistently, it would not bleed.

Being left without any guide to the wounded vessel, the

flaps were brought together, compresses wet with cold water, applied, enjoined strict rest, with elevation of the stump, gave half a grain of morphiæ, and departed, with a *faint* hope the hemorrhage would not return. But my hope was "like a dream, to wake up in disappointment." My office had scarcely been reached before a messenger entered and gasped out, "he is bleeding again."

On reaching the house found the stump to contain a large coagulum, but not so large as the former, and the blood issuing from the inner angle of the flap, this was controlled by making pressure on the femoral artery, which afforded a clue. The femoral compressed by an assistant, the coagulum was turned out, and to facilitate matters the flap split up on the inside. The pressure being discontinued, the blood was seen to pour out or well up in a continuous stream as water rising from a spring. But the tissues were in such a disorganized condition that it was impossible to secure the bleeding vessel, and as compression of the femoral artery controlled the hemorrhage, it was concluded to ligate that vessel, which was accordingly done 1½ inches below Poupart's ligament.

From this time the patient progressed favorably, and is now going about on crutches.

On dissecting the amputated member the femur was found to be broken into six pieces. The middle and largest piece was fissured or split, but held together by the periosteum. The fifth piece from above, downward, was firmly impacted into the upper end of the lower fragment. The femoral vein had a small lacerated opening in its posterior and external aspect. All in all, presenting a variety of complications rarely witnessed in a single case.

To Doctors Hunt, Slayter, and Macdonald I am indebted for valuable assistance rendered during the operation.

January 7th, 1865.

—Elmer's Hand-Book of Practice for 1865 is for sale by our principal dealers in Medical Books and Periodicals.

ON THE ACTION OF BROMIDE OF POTASSIUM.

By S. W. D. WILLIAMS, M. D., L. R. C. P, Lond.

Reading some remarks in a late number of the *Lancet* on the action of bromide of potassium, and having tried the drug extensively for the last five months, it has occurred to me that a few observations on its action may not be unacceptable to the readers of the *Medical Times and Gazette.*

Through the kindness of Dr. Wing, the Superintendent of the Northampton General Lunatic Asylum, I have been enabled freely to try it in as many as thirty-seven cases. These were all epileptics, and I append a table showing in one column the number of fits registered during the last five months of last year, when they were taking no medicine, and in the other the number registered during the first five months of this year, when each case was taking on an average ten grains of the salt twice daily.

I may premise that the greatest care was taken that, for the whole of the ten months during which these thirty-seven patients were under observation, their lives, with the exception of taking the bromide during the last five, should be spent under as near as possible the same circumstances.

Males' Names.	Fits during the last five mos. of 1863.	Fits during the first five mos. of 1864.	Females' Names.	Fits during last five mos. of '63.	Fits during first five mos. of '64
W. M.	148	107	E. H.	23	19
J. R.	69	45	E. J.	25	37
J. B.	32	21	M. K.	60	27
J. J.	246	91	E. H.	29	9
W. L.	55	87	E. W.	50	56
S. L. B.	19	24	C. S.	17	23
T. H.	40	29	S. A.	82	85
C. B.	52	46	M. L.	20	5
R. H.	112	102	A. S.	41	22
G. M.	47	64	E. G.	46	53
W. W.	36	37	H. W.	1	...
J. L. M.	33	26	M. L.	57	8
T. G.	13	4	A. C.	11	22
R. G.	30	9	M. C.	1	...
J. K.	25	16	S. A. P.	577	556
E. E.	8	14	S. A.	1	...
W. O.	10	10	S. S.	73	37
W. M.	29	14	E. G.	13	11
J. J.	8	10	....	..	..
	1012	706		1127	970

From the following table it will be seen that the number of fits amongst the males decreased by 306, and amongst the females by 157; that all the patients but 5 males and 6 females were benefited more or less; that the improvement was, however, more apparent amongst the males than the females; but that no patient of either sex was entirely cured. It is right to remark that all these patients are more or less insane, and many of them extremely violent at times.

Mr. Henry Behrend, the writer in the *Lancet*, confines his remarks to the powerful effect this drug has on "insomnia and restlessness, accompanied and dependent on nervous excitement and irritability," and this statement my own observations fully corroborate; but I have not the same confidence in recommending, as he does, the unfettered use of half-drachm doses; for in several of the cases recorded above it was found necessary to reduce even the average—ten grains twice daily; and in the majority the first use of the drug was accompanied by sickness and lassitude.

Those patients on whom the drug seemed to take the most effect in this way were seven in number; after using it for a few days the action of their hearts became slow and fluttering, the eye lost its lustre, the skin was cold and clammy; they had a wearied, anxious look, and complained of headache, and sickness, and shivering, and of unusual weakness at the knees, and invariably sat crouched up by the fireside all day, evidently devoid of all energy and resolution. Curiously enough, in all the cases thus powerfully affected the fits were increased instead of diminished.

The drug excited hypercatharsis in two patients, which was repeated again and again each time it was renewed; the fits in both these cases were diminished; in the case of the female from 41 to 22.

One patient, S. A., was apparently, five months ago, one of the most healthy persons in the home—fat, strong, and rosy; but soon after taking the bromide, the peculiar symptoms described above developed themselves, and the medicine was immediately omitted; but, although she rallied a little, her system never thoroughly recovered itself; tubercles became developed in the lungs,and she died towards the end of April. Truth compels me to confess that I have my doubts whether the bromide of potassium had not something to do with the poor girl's death—at all events, this occurrence has made me very watchful when using it.

On the other hand, considerable benefit has arisen from its

use in some cases; it undoubtedly exercises a most powerful influence on the nervous system, and often soothes the irritability of epilepsy, even if it does not diminish the frequency of the fits, when no other medicine will take any effect, and in this way will be found a most valuable adjunct to the repertory of an asylum Dispensary. I cannot think that it has much effect, however, on the sexual system; for in some cases where it was used more especially with that view, there was no apparent result, but of its powers in inducing sleep in cases dependent on nervous irritability there can be no doubt, and often from ten to twenty grains twice daily will suffice to effect this.—*Med. Times and Gaz.*

INFLUENCE OF PERIOSTEUM ON THE REPRODUCTION OF BONE.

"The third meeting of the Medical Congress at Lyons was entirely devoted to the discussion of two surgical questions: 1. What surgical improvements have modern investigations on the osseous system effected? 2. On the value of the means which may advantageously be substituted for the knife with a view of preventing the accidents which result from wounds. The whole discussion on the first question was confined to the part which the periosteum plays in the regeneration of the osseous tissue. Here the two existing schools of surgery, the old and the modern, were in direct opposition: the former asserting the entire inactivity of the periosteum, and the utter inutility of preserving it in operations; the other attributing to that membrane the only active part in the regeneration of bones. M. Ollier, of Lyons, (who has acquired great reputation precisely on account of his numerous experiments on the periosteum, and the importance which he attaches to that membrane,) together with M. Verneuil, of Paris, warmly supported the latter opinion, while M. Desgranges and others attacked it.

"According to M. Ollier, the periosteum alone reproduces the bone; no other tissue can do the same. All bones may be reproduced, whatever their form. The condition of the general health of the patient is influential in the work of reproduction. This reproduction takes place in man as well as in the lower animals, clinical facts being here in accord with ex-

perimental facts: *hence* the necessity of sub-periosteal excisions—much easier and much more simple than the resection by the old system. In support of these assertions, M. Ollier presented to the Congress numerous anatomical specimens, the results of his different experiments. He showed, in cats, the radius and the peroneum reproduced in different parts where the periosteum had been preserved; whereas they were wanting where it had been taken away. In one specimen, which excited general admiration, the humerus of a dog was entirely reproduced with perfect regularity of form. M. Ollier exhibited short as well as long bones in which the osseous regeneration was visible. He insisted on the importance which should be attached to the influence of general hygienic conditions while considering the success or unsuccess following sub-periosteal operations.

"To these various arguments M. Desgranges answers: that experiments had been made by other *savants* which had proved unsuccessful; that it could not be supposed that a membrane wet with pus could produce the effects attributed to it; that if the periosteum can reproduce the osseous tissue in a rabbit such a fact has not as yet been clinically observed in man. And besides, why preserve the periosteum at all, when we are told that it can reproduce itself even when taken away? The periosteum, it had been said, tends naturally to attach itself to the bone; wherefors, then, the necessity that in amputations of limbs the extremity should be covered with the periosteum? If this were true, what a marvelous discovery it would be for surgery! There would be no inflammation; no suppuration of the bone. Unfortunately this was not the case. He had already tried it five times, and he had observed prolonged suppuration and greater difficulty to cure. The 'supporters of the periosteum' had extolled its utility in cases of comminutive fracture, but the Society of Surgery itself had lately discarded this notion. Besides, the term itself of 'sub-periosteal excision' was incorrect; for in Maisonneuve's cases and others, operations for simple necrosis bore that name. The true sub-periosteal excision would be rather the emptying of the bone proposed by M. Sédillot, of Strasburg. The true field for sub-periosteal excisions was to be found in osteoplastic operations, and hitherto they had proved unsuccessful. In conclusion, he saw no truth whatever in the new functions attributed to the periosteum.

"With these two discourses, which embody the best arguments on both sides, I leave the two schools, in presence. Let

me not forget, however, to mention, as an important feature of the debate, the presentation made to the Congress by M. Aubert, a medical practitioner at Macon, of a young man, 17 years of age, on whom he had performed an eminently successful operation. This young man had been affected with a caries which occupied the whole epiphysis of the left tibia, together with condensing osteitis occupying a little more than the lower third of the dyaphysis. M. Aubert made an incision in the skin; separated the periosteum, and that very easily, as it was inflamed and adhered but little to the bone; then, slipping a chain-saw beneath the periosteum, he took off all the diseased portion of the bone, and disarticulated the tibia at its lower extremity. Four years have elapsed since that operation, and the patient now possesses a tibia entirely re generated, of the same form and volume as before. A very slight longitudinal depression scarcely indicates the part where the incision had been made. This newly-formed tibia ends below with an ankle perfectly formed; and the young man, whose health is vigorous, can walk fifteen miles a day, and dance during several hours, without any fatigue. This brilliant success, which speaks in favor of the sub-periosteal system, was saluted by the Congress with general applause." —*Paris Correspbndent of Lancet.*

ILLUSTRATION OF SOME SURGICAL PHENOMENA BY THE THEORY OF PROJECTILES.

By E. C. BIDWELL, Surgeon 31st Mass. Vols.

I suppose that every missile projected from the mouth of a firearm, of whatever kind or calibre, has, in addition to its projectile motion, a motion of rotation upon an axis of its own. If this rotary motion be not the purposed result of the construction of the weapon, it is acquired from accidental causes, which may operate upon the missile at its start or during its flight. Any defect in the gun, or even a slight inequality in the shot, may cause it. Indeed, it is the design of the spiral groove which is introduced into most modern arms, large and small, to give the shot a rotation upon an axis corresponding to the line of traject, thereby to forestall the accidental rotation, which is more likely to be in some other direction, and tends to deflect it from its intended course. This rests upon a manifestation of the physical property of inertia, by which

a body in rotation tends to continue to rotate in the same direction, unchanged by any motions that may be impressed upon it as a whole. In other words, the direction of its axis continues parallel to that with which it commences, so long as the rotation continues. This principle is illustrated in the familiar toy, the top, in the spinning plates of the mountebank, and in the revolutions of the heavenly bodies. Now, as the line of flight is always a curve, the axis of rotation ceases to correspond exactly with that line the moment the flight commences. With every succeeding instant the one departs from the other more and more widely. A conical ball from a rifled gun must therefore impinge obliquely by its rotating side, and the more so as the gun is more elevated for long range. That is the theoretical result. I presume that in artillery it is the actual result also. It is said to have had a curious exemplification in the case of the percussion shells sent into Charleston by the Swamp Batteries, which failed to explode because they did not impinge by their apices. In the case of small arms it is found that the designed rotation is often merged in that which proceeds from accidental causes. The impressions upon conical leaden balls picked up on battle-fields, and their positions in various lodging places, prove that they impinge in all directions, and scarcely more frequently by the apex of the cone than by any other part. The acquired rotation of round shot is probably always upon an axis perpendicular, or nearly so, to their projectile direction.

This rotation of round musket balls is probably an important element in determining the erratic course which such balls sometimes take in the body. For it is evident that a ball in rapid rotation entering a medium in which it meets with considerable resistance, will most easily overcome that resistance on that side of which the surface motion is towards the resisting medium, because on that side the force of rotation is added to that of projection, and on the other side is so much deducted from the same force. It will consequently be deflected towards the side of least resultant force. It is well enough to remember that the rotary motion, meeting less resistance than projectile motion from the air, and none from gravity, may continue rapid and even violent after the latter is nearly or quite spent.

Another way in which the rotary motion of projectiles may modify surgical results, is found in the occasional violence of spent cannon balls. A round ball may be moving slowly along the ground, apparently just ready to stop. A careless observer puts his foot against it, and receives an injury which

may prove fatal to the member. It has been suggested in explanation of such cases, that the velocity was really much greater than it seemed; but if it were possible to note its progress and direction within such limits of distance that one could put himself in the way of it, the velocity must really have been very moderate. Others have referred to the great momentum which the missile *had*, as if momentum was not exactly proportionate to the velocity, and exhausted when motion ceases. But it is possible for a cannon ball, as for a billiard ball, or a marble, to have a rapid rotary motion after its projectile motion has ceased, sufficient to make it a dangerous neighbor. In that condition anything not capable of greater resistance than the human body, brought into forcible opposition with it, would inevitably suffer violence, precisely as it would if brought into like contact with machinery in like rapid and irresistible motion.

The same principle comes in to modify the injury in oblique impingement by cannon balls. If the rotation is such that on the side impinging the surface is moving forward, or in approximately the same direction as the projectile motion, a laceration results, co-extensive with its touch. The revolving surface moving with the velocity of rotation added to that of projection, *by friction* tears its way through the tissues as in the case already cited. If the rotation be in the contrary direction, so that the rotary motion of the impinging surface in a measure offsets or counterbalances the projectile motion, as in the case of a cannon ball simply rolling over a part, its surface friction may be so slight as to leave the skin unbroken, even unabraded, at the same time that the projectile momentum is sufficient to crush and comminute the parts beneath it to a fatal degree. Of this kind are the cases in which persons are supposed to be knocked down or killed by the "wind" of a cannon ball—an idea which is sufficiently refuted by the fact that shot not only come very near, but into actual collision, carrying away a hat or an arm, without any such stunning or destructive "wind."

It is indisputable that injuries from cannon shot are met with, of these two kinds, in one of which there is profound lesion, with little or no external indication; and in the other frightful laceration, displaying at a glance the full extent of the injury, yet altogether, perhaps, a much less grave injury than the other. That the rotary motion which these projectiles have is sufficient cause to account for the difference of effects, is demonstrable on the principle of mechanics. It is

not unimportant to know that something more than mere inexplicable caprice governs movements and determines results, here as elsewhere; that effects follow causes, even in the erratic movements of the missiles of warlike engines.—*Boston Med. and Surg. Journal.*

ON THE

INSPIRATION OF VAPOR IN CERTAIN LESIONS OF THE BREATHING APPARATUS.

By JOHN HUNTER, M. A.

Without laying claim to any great originality, I trust that the few observations I have to make upon this important subject, to which I have directed considerable attention, may be worthy of notice by the profession.

I suppose no one will deny that, as a general principle, the use of moisture in combination with air is of service in chest diseases. This we see daily evidenced by the beneficial effect of sea-air—which contains vapor in excess of the amount held by the air generally—in different forms of bronchitis, etc. But it is to insist on the powerful remedial agent which we possess in vapor when judiciously used at the bedside of the patient that is the object of the present paper. On the first appearance of an attack of, say, simple bronchitis, the first system observed by the patient is a feeling of oppression in breathing, "a tight feeling across the chest." This is caused by the proper secretion of the lining membrane of the lungs being partially arrested. The air-cells are in an equal degree incapable of performing their proper functions—namely, the reception of oxygen from the inspired air, and the giving out of carbonic acid gas; the result of which is that the patient has a diminished area of breathing-surface, in proportion to the intensity of the attack. And here I may remark, in passing, that there is an evident necessity in such a case that the patient should have the purest air procurable, to make some amends for the deficient quantity. Now in this stage of the bronchitis, I believe we have no such powerful agent as steam, properly applied. The precise mode of application may be varied to suit different attacks in patients of different ages, and other peculiarities; the great principle being that the steam should be carried with the inspired air into the air-cells, where it not only acts as a substitute for the natural mucous

secretions, but by its soothing action disposes the membrane to resume its normal functions. I have seen an attack of acute bronchitis cut short by these means, almost without any other; while in the different forms of asthma it is found of the greatest service. I put the acute bronchitis first in the list, as I think that it yields to the power of steam more easily than any other form of chest-disease; but it is good in all. And even in chronic bronchitis it is of the greatest service in softening the glutinous sputa, and rendering it much more easy to be got up by the patient, thereby saving time and many coughs, the patient being enabled to get up all his expectoration at the beginning of the night, and thus start, as it were, with a fresh account, instead of being tormented by the small installments frequently due. In phthisis, also, I have found the breathing-in of steam to be of the greatest service in the frequent though often slight attacks of localized congestion, which denote that the disease is placing its grasp upon another portion of the lung; such attacks, if not altogether warded off, being certainly modified in their intensity. I could now give details of many cases in which phthisis appeared to be kept in subjection, each exacerbation of the disease being speedily met and apparently crushed; but I must proceed to give details of the mode of application of the steam. This varies in different patients.

In the case of infants, where the simplest means must be used, I have found nothing to succeed so well as placing a flat and broad vessel at each side of the cot in which the little patient is; these should be kept filled by the nurse with hot water, and the steam from them is caused to ascend and float round the little sufferer, who unconsciously inspires the beneficial vapor. In patients of more mature age the steam may be applied by an ordinary teapot, which being *half* filled with boiling water, and the mouth applied to the spout, the patient may be taught to draw in the steam with his inspirations. At first it may give rise to a little irritation of the mucous membrane, but the patient quickly feels the beneficial effect, and generally perseveres in its use. It is a good plan to put some tea, cinnamon, etc., at the bottom of the teapot, which prevents the insipid taste of the steam from being disagreeable to the patient. I lately had a patient, an overlooker in a cotton factory, who was suffering from chronic irritation of the lungs, evidently arising from the small particles of cotton floating with the inspired air into his air-cells, and there giving rise to his sufferings. I explained to him the action of steam in his case, and he, being of an ingenious turn, put a

piece of elastic tubing, about four feet long, to the spout of the kettle, and after his day's work, regularly sat by his fire inhaling the steam, and in about half an hour was able to get up all the cotton taken in during the day, thereby ensuring a comfortable night's rest, which had been before impossible from cough. Steam may be applied in this way: a small perforation is made in the lid of a common kettle, into which may be soldered a short tin tube bent up at a right angle; attached to this may be a tube of vulcanized india-rubber, of any reasonable length, which may reach over to the bed-side of the patient, and, opening out near the patient's mouth, may during the night keep the air inspired hot and moist. The whole expense of this apparatus is only a few shillings. This plan is adapted for night-work, as the kettle, if filled at bed-time, will furnish steam sufficiently during the whole night. Many other plans may be adopted, and no doubt will occur to the ready mind, but the great object to be attained is to keep the air inspired warm and moist as a powerful curative agent, being one particularly useful in this climate, where diseases of the chest are so common.—*London Lancet.*

LAUDANUM AND TEETOTALISM.—Dr. Alfred Taylor, commissioned by the Privy Council, has sent in a report on the means of committing murder by poisons which are allowed to exist in England. He says that poison enough to kill two adults can be purchased anywhere for threepence; and that the careless dispensing of poisonous drugs is cause of most frightful accidents. As to laudanum, it appears to be sold wholesale, single shops in the Marshland supplying three or four hundred customers every Saturday night. Retail druggists often dispense 200 lbs. in one year, and one man complained that his wife had consumed £100 in opium since he married. It is a mistake to consider the practice confined to the marshy districts. We do not believe there is a town in England where some one chemist does not on Saturday night load his counter with little bottles of laudanum; and we are assured by a wholesale druggist that he could and did sell it in the eastern counties to the extent of some thousands of pounds in a year. This gentleman, an old and keen observer, declared that the demand had sprung up shortly after the introduction of tectotalism, and that it would be found to vary everywhere, in accordance with the progress or decline of the system of total abstinence.—*London Spectator.*

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ORIGINAL COMMUNICATIONS.

TRANSMISSION OF HEREDITARY DISEASES.

ANIMAL GRAFTING—ORIGIN OF TUBERCULAR MATTER—SOLIDIST'S THEORY OF IT.

By E. NICHOLS, M. D.

Theories often arise and conclusions are drawn from very small and imperfect experiments and distant facts. Owing to this many arguments have been advanced without bestowing light on subjects discussed or being of practical benefit to any one. Among other questions discussed without obtaining satisfactory conclusions is that of the true *modus operandi* in the transmission of hereditary diseases; some holding that the transmission takes place through the solids, and others maintaining that the diseases are transmitted through the medium of the fluids.

For a long time I have had peculiar if not original ideas concerning the transmission of hereditary diseases, as well as the peculiarity of the commencement of certain maladies in the system. In the years 1861 and '62, I made some inter-

esting experiments in *grafting animals*, and from them derived what I deemed a sufficient proof of my theories.

My idea was that the whole caste or peculiarity of a being belonging to a race or family rested with the *tissues* of the body—the *blood* or other fluids having nothing to do with it. I saw some crab apples growing on trees in the same soil that gave growth and nourishment to trees bearing sweet plumbs, while a tree loaded with rosy peaches stood in their midst. The soil furnished the same quality of nutriment to the roots of all these trees, yet their several saps varied in composition and nature. Then it must be a peculiarity in the roots of these trees—a difference in their selective powers—and not a difference in the nutriment furnished by the soil to each. By grafting, my theory was more closely proven. Place a very small piece of pear-sprig, a single bud, into the bark of a gnarled crabapple tree, and as fine a branch of pear and as sweet pears will grow on the crabapple-sap as could be grown on the parent tree. This, then, was proof positive that any peculiarity of a vegetable body rested with the *tissue* and *not* with the *fluid* that fed it. Was it the same with animal tissues? The question seemed interesting and well worth solving, and after a patient trial I succeeded in grafting animal tissue. I transplanted a small piece of integument from a squirrel into the skin of a dog, and it was retained and nourished after a time as well as if in its original place. *Squirrel skin and hair was grown from the blood of a dog.**

*In the year 1862 I began an article on hereditary diseases, in which I designed to mention this experiment; but, entering the army soon after, I never completed it. However, I wrote a short article of general interest and novelty in which I mentioned the result of my animal grafting, and which was published in a New York literary paper early A. D. 1862. Since that time Dr. Bert has published a book on "Animal Grafts," as I have been able to learn through the "Book Notices." I have not seen his work, nor do I know how far he claims originality, but I believe I am safe in saying that I am the first to publish any thing on this subject.

Nearly a year ago, I again commenced a course of experiments in animal grafting, and wrote to Prof. Ingals, of Rush Med. College, to enquire if he knew of ought to prevent my claiming originality in the experiments. His answer was, "that he knew of nothing ever having been published on the subject." Dr. Bert's book, I believe, has been issued since that date; yet Animal Grafting may be original with him as well.

Now, if peculiarities, whether predisposing to disease or superiority, was dependent on the fluids of the body, why did not the blood of a dog make dog-integument and dog-hair out of the squirrel skin depending on it for life and nourishment? According to the theories and belief of fluidists it should have done so. Because this did not occur, but on the contrary dog-blood built up squirrel tissue, I considered it a sufficient proof of this assersion. No matter what is the peculiarity of a certain tissue, all tissues arising out of it must partake of the same peculiarities, no matter what may be the characteristic nature of the fluid nourishing it. The assimulative power of the tissue will select only such material as will build up particles of the same nature, and its formative power will endow it with all its peculiar shapes and impressions. We know this by a more general view in observing that the same fluid feeds bone, muscle, ligaments, etc.

The germs for a new being we know are secreted from the blood of the parents; but in that germinal, or in the primative being there is no blood until it is generated by the tissues of the fœtus, while there is no interchange of blood with the mother and her offspring during the whole of fœtal life. Not only this, but a disease is as liable to be inherited from the father as the mother. Therefore, I can not understand how a disease may be transmitted by the blood. But if there is any peculiarity in the tissues of the parent, I can imagine how the germ may be marked by the same peculiarities, and the tissues of the new being endowed with the same distinguishing features. But when it comes to atoms too minute for the vision, even aided by the most powerful lens, it is difficult to determine their shape or nature, or understand the manner in which they are impressed. We can not observe molecular metamorphosis, yet it is these same minute molecules that bear the characteristic likenesses of its parents, and on the perfectness of these alone depends the tone and nature of the system they compose. If, owing to imperfection in the parents, they are in any way defective, they of course are liable, or pre-

disposed to the same disease as were the parents. On the other hand, the blood does not depend on blood for its regeneration, and therefore can not for any length of time retain peculiarities in composition or hold in it diseased forms. Besides this there is no disease whatever existing in the system until there has been a deleterious change wrought in some of the molecules comprising it. Blood may be diseased; but the system does not suffer until the tissues themselves are changed or affected by it. The blood being imperfect may be the cause of changes in the tissues, and no doubt is often the cause of disease; yet perhaps the blood is more dependent for its qualities on some of the tissues than we universally maintain. Blood, being a medium of elimination, I can not believe it capable of retaining a disease, though at times it may have in it bodies foreign to its nature. If these are of a nature not allowing of elimination through the excretory glands, the blood will not long retain them, but deposit them in some organ where they may then produce disease.

I have maintained that when a particle of tissue is disintegrated and replaced, that the new particles bear the same distinguishing features as marked its predecessor; yet I would not be understood to believe that the impressions do not grow less and less marked as molecular changes go on in a healthy and tonic condition. Yet that these impressions are retained by the tissues, there is little room for doubt. How else can *memory by the brain* be accounted for? Particles of the brain receive impressions from the external world through the special senses.

The particles impressed, however, are constantly going through the same metamorphosis as other molecules, and unless the successive particle was built up with the same peculiar impression the *memory* would be destroyed with the atom of brain matter disintegrated.

Taking this view of the subject, I will glance at the commencement of an acknowledged hereditary disease in a system and trace out the *origin of Tubercular matter.*

Tubercular matter, such as is deposited in the lungs in phthisis tuberculosis, differs from any of the tissues of the body, and it is difficult to decide accurately regarding its origin, and our theories must of necessity be more or less hypothetical; but often hypothetical arguments work out well in practice.

Every action of the body is the cause of decay to the tissues, and this constant disintegration is counteracted by a process of perpetual rebuilding. The disintegrated matter is eliminated by exosmosis from the cell-space into the capillaries, and a proper supply of new building material is taken up by an assimulative power of the changing molecule. If nature has a free scope of operation the matter endosmosed from the capillaries to the cell-space will correspond in quantity and quality to the matter broken down and exosmosed. But there may be an interruption of this natural process; and then there may be other matter taken up from the blood than such as can be converted into tissue of that kind, or the disintegrated matter may fail to pass from the cell-space into the capillaries, owing to an arrest of circulation in the capillaries, or otherwise.

Consumption is liable to a system where disintegration occurs more rapidly than the process of rebuilding can take place, whether the causes are hereditary or not. There are many causes which produce it in systems not predisposed to it; but I will confine my brief notes to the hereditary form only.

The *peculiarity* of a tissue-molecule predisposing to the formation of tubercular matter I will suppose to be a lacking in its assimulative power; or, being imperfectly formed, it may be more rapidly torn down than a healthy molecule, and therefore has less power to select proper nutriment for its reproduction. This may give rise to a foreign matter being placed in the cell that should be occupied by a perfect tissue molecule. This foreign matter may be the disintegrated part of the old molecule which has not been thrown out, owing to

an interruption of the laws of exosmosis and endosmosis, or it may be a conglomerated material from the blood, which has passed into the cell through other agencies than by the assimulative power. This matter is surrounded by chemical changes which will cause it to endeavor to take on an organic nature, and as it is not proper material for tissues, it becomes a semi-organic body—*tubercle*. This occupies the cell-space and no doubt takes up matter for its growth like all other molecules, and as it increases in size it is forced from its lodgement if situated in an active organ—muscle for instance—and is carried off in the blood. If not too large it is eliminated through an excretory organ; but, if too large, it is carried on until it finds lodgement in the capillaries of an organ that is not active and hardy enough to displace it and force it on in the circulation. If it stops in the liver, or lungs, or like structures, it remains, and by its assimulative power for like material it increases in size until it makes a large tubercle. The reason we have this matter deposited in the lungs more frequently than elsewhere is no doubt because all the blood of the circulation passes through these organs, and because there is less force here to expel the foreign matter.

Thus we have the formation of tubercles owing to a predisposition of the *tissues* to a *too rapid disintegration*, or a *lack of assimulative power*. Yet, can there not be an improvement wrought in such tissues and the results of such conditions warded off? Without doubt, I think, there can be improvement made and the tissues restored to a healthy condition. Let us again have recourse to the mind and brain for illustration. It may appear to be getting into a shadowy realm for illustration; but I hope the investigation will be none the less satisfactory.

We have said that a particle of brain matter being impressed, its successor is impressed in like manner. This must be so, as a thing once received by the brain may not be acted upon for a long time by *nerve-fluid*, or whatever else it may be—known as such though,—yet the impression is still there,

though perhaps less perfect than when first received. And, owing to this very imperfectness, we must believe that each succeeding particle is less strongly impressed until lost entirely, and we have instead of memory a thing forgotten. Thus, for instance, you will see in two old friends who have not met for many years, that one can recount incidents in the early lives of both that the other can not recall a shadow of, and *vice versa*. This is simply because one has not thought of it since its occurrence, while the other has had it frequently reimpressed by the action of thought. So it is with tissue molecules. Though deleteriously impressed at first, if all the agencies which caused this impression are studiously avoided so that no reimpression will occur—which will take place much easier than in the first instance—the molecules may be brought back to a normal condition.

Knowing the causes of phthisis tuberculosis, it will not, then, be difficult to prescribe hygiene for one predisposed to it, and in like manner we draw our inferences in regard to the treatment of those already suffering from this dreadful malady.

ANN ARBOR, Mich., Jan. 7th, 1865.

FŒTAL HYDROCEPHALUS.

By O. A. WHITE, M. D.

On the 16th of Dec., 1864, I was called to see Mrs. W. in labor, the messenger saying that "the body was born, but the head could not be, and the child was dead." I went immediately, taking my forceps with me. Arrived at 4½, P. M., and found the patient, a strong, healthy looking woman of 25 years, in her first labor, which she believed a month too soon, and in the condition as stated by the messenger. A midwife was in attendance, who stated that "labor commenced at 1, P.

M., and at 3 the waters broke, with the feet presenting; three pains following closely upon each other brought forth the body; the child was alive, and kicked many times." The pains, she said, then ceased entirely and the child soon died.

The patient was comparatively comfortable, the pulse good and no symptoms of exhaustion. Upon palpation of the abdomen it was evident that there was more in the womb than an ordinary sized head and the placenta. By examination per vaginam, I was able to reach the occiput, and by considerable effort got my index finger in the child's mouth, the face being at the left sacro-iliac synchondrosis, but could not move the head in the least. I informed the friends of the condition of affair, and said that I had little hope of delivering her without an operation. They were very averse to this, and as the woman's strength was good, and the pelvis capacious, I determined to give ergot.

Preparing a decoction of three drachms of the grains, of good quality, I gave it all to her in four fluid drachm doses, every fifteen or twenty minutes, without producing a single uterine pain. This was as far as I thought proper to carry its use, although the child was dead and not, of course, in any danger from violent contractions of the uterus, should they occur, and the uterus itself being partially contracted, in little or no danger of laceration, as I believed, from the same cause. After allowing sufficient time to elapse after the exhibition of the ergot, and finding the womb closely contracted over its contents, I decided to use the forceps. I had no difficulty in introducing them, but when introduced they would not lock. This confirmed my previous belief that the head was of abnormal shape and size. The forceps were of the pattern used by Prof. DeLaskie Miller of Rush Med. College.

By further palpation of the abdomen I could distinctly feel the disconnected bones of the cranium jutting upon one another, and believed that I could detect fluctuation when laying my left hand on the abdomen, and thrusting the index finger of my right, against the occipital bone.

It was now 1 o'clock at night, and twelve hours since labor commenced, the patient's strength was failing, and it was too far to send for my perforator: so taking the scissors from her work-basket, I thrust them through the occipital bone of the child, widened the wound with my finger, and drew off about two pints of limpid fluid, by estimate. The cranium collapsed like an empty bag, and immediately came away, followed at once by the placenta. The womb readily contracted to the usual size after ordinary delivery, without hemorrhage and without a single uterine pain having occurred after the shoulders were born.

No accident had befallen the mother during gestation, her health had been good during the whole period, and she has recovered as well from her confinement as is usual in favorable cases. Both the parents are, to all appearances, strong and healthy.

There was no separate tumor containing the fluid, but it was all contained within the expanded cranium, which was more than twice the normal size. The child was apparently well developed in other respects, and would have weighed seven or eight pounds if the cranium had contained nothing unusual, but I had no opportunity of making a careful examination of it.

Iowa City, Iowa, December 28th, 1864.

FOGYISM IN PHYSIC.

An Address delivered before the Cairo Medical Society, and published in compliance of a vote of the Society. By the President,

W. C. MUNSON, M. D.

The preservation of health, the prevention and removal of disease, are perhaps the most interesting and absorbing subjects which can claim our attention. Hence great and philanthropic minds, from Hippocrates down to the present time, have (by laborious research and experiments) built up what is called a "medical profession." Candor, however, compels

the admission, that a spirit of bigoted *exclusiveism* has been, and is yet too frequently found among its members.

When success of *party* is more coveted than the triumph of truth, this spirit is fostered; and free and liberal investigation is stifled. From this exclusiveness we wish to be free. In this age of progress, when the foundations of political, and even ecclesiastical superstructures are so closely scanned, the members of this noble profession should put their seal of disapprobation upon all the *despotic edicts* of "Medical Associations," either *National* or *sectional*, which declare that every physician shall be strictly *regular* in his practice, and follow the course laid down by his *master*, else himself and students shall be proscribed from the profession, and excluded from Medical schools, where such free-thinking *heretics* might corrupt the young and unsophisticated *lambs* of the *flock*. Believing such rules better adapted to the government of infants than men, we would say—let them be *abolished*.

Freedom is needed to think. Liberty is demanded—liberty to investigate calmly, without fear or favor, and reject all old and crumbling errors, though called *science;* whether upheld by *Authority* or not. Liberty to travel out into the unexplored fields of nature and gather such instruction as she may place within our reach. When "Medical men" shall discard the appellation "Allopathy," or any other name indicative in the popular mind, of a *party* in the profession, our ears will not be offended by the question (so grating upon the auditory nerves of the man of science,) "What system do you practice?" Why there is but one system of practice. Among scientific men there necessarily can be but one, which is, of course, the "*Curative System*," and consists in the employment of the most efficient therapeutics within their reach. As a matter of course, the kind of therapeutical means employed will depend very much upon the diagnosis. Everything available within his reach may be "pressed into service," and made to "do duty" for the physician who is more devoted to the development of truth, than the advancement of *party*. To *him* there is nothing interdicted.

Doubtless the parties which have originated in the profession, and the exclusiveness which party spirit engenders, has bound many active minds in a kind of mental *incubus*, from which they never escape, and but for which, might have added largely to the resources of the profession. At the present day, when such a vast amount of published matter must be *sifted*, in order that the greatest amount of truth may be elicited, we need freedom to look around, compare, analyze and investigate, that a full array of facts may be *marshaled*, to aid in the adoption of truth, and the rejection of error and *quackery*.

It could hardly be expected, however, that the student, in the commencement of his explorations in the vast field of medical science, should be competent to make judicious selections of *text books;* and will save much valuable time by having these selections made for him. The undisciplined mind is easily mislead, and the power of delusion is so great, its operations so extensive, and its evils so terrible, that every influence favorable to close investigation should be brought to bear. In short, it should be impressed, that *facts* not *theories*, should be trusted. The history of the world shows that the majority of mankind quietly yield themselves to every delusion which may be prevalent in the country where they were born. Tell me in what community a man was born, and I can tell almost to a certainty what principles he has adopted. In one community he will be a Roman Catholic, in another a Protestant, in another a Greek, in another a Jew, in another a Mahomedan, and so on, taking the hue of society, imbibing every delusion which surrounds him, as the tree imbibes the sap from the soil where it is planted. And these *opinions* or delusions, thus passively imbibed, are seldom received because supported by specious arguments, or tangible proofs, but too often by *influential* associations, conspiring against the people, or by the strong arm of military power.

At present, in Europe and America, various forms of Christianity are professed. But that we are called Christians—

that we are not repeating prayers with our faces towards Mecca—is probably only because, in the eighth century the Catholic armies were more powerful than the Mahomedans. Because Charles Martel, the mayor of France, in the great battle of the plains of Poictiers, in 732, succeeded in driving back the hordes of "Saracen invaders," whose armies at that time threatened to conquer all Europe. That man should be the passive creature of circumstances, believing what a king decrees to be true; that he should accept with all the fervor of his soul, whatever has been arranged for him to believe by kings and priests, is one of the melancholy and humiliating facts of history. The combined leaders of mankind in former times, and under the influence of monarchical governments, have looked upon the masses as mere puppets to be moved by the word of command. These sentiments and this policy still prevails in Europe; and has attached itself more or less to all that we have borrowed from Europe. We have borrowed from Europe much of the literature, rules, organization, sentiments and *esprit de corps*, of the profession.

So much of the above spirit as exists among us has probably been transplanted from the monarchical soil of Europe to the free soil of America. If it lives and flourishes here at all it is as an exotic, having nothing in common with the free spirit of our country. May it not be that the influence of Europe in this direction exists among us too much? Perhaps the idea is too much acted on, that the *leaders* must think for the masses, and that the *authorities* must be obeyed by their humble followers. The writer does not, by the above remarks intend disrespect for the *learned authorities*, or insinuate that their study is unnecessary, but simply that no fine-spun theories, however well they may appear on paper, or sound to the ear; that no weight of authority that may attach to great names, from Hippocrates and Galen, down to Benj. Rush, should induce us to receive their opinions without strict scrutiny, and unbiased and rigid investigation.

Perhaps teachers in Medical schools err, when they receive

their young and impressible subjects from the country, and tell them that they must follow their great *authorities* and indorse all their doctrines. And does not the student (finding himself surrounded by the imposing influences of flourishing colleges and public sentiment, from which it is not easy to escape,) passively yield his soul to the guidance of his teachers, and become too much like clay in the potter's hands to be molded into shape? How seldom is heard expressed a manly sentiment in favor of free and independent investigation? More frequently is the idea of reverence for the *learned authorities* inculcated. And this, perhaps, becomes so impressed on some minds that it goes into the very structure of the soul. Like the image of himself, which Phidias cut so deeply into the buckle of his Minerva, that no one could obliterate it without breaking into fragments the statue itself. And thus through life they never undertake to investigate for themselves, the doctrines taught them in their youth. It is gratifying, however, to be able to state that *Fogyism*, as above portrayed, applies more to the past than the present; that in our Medical schools in America, at the present day, the above is the exception, not the rule.

Let there be no stone wall of *party* prejudice erected around us. Let it not be thought disreputable to take a careful survey of Homœopathy, Hydropathy, or Eclecticism, or give them credit for all the truth they may, individually or collectively, possess. In this day of progress and intelligence, we think it incumbent on every high-minded physician to refuse to be controlled by party restrictions or prejudices, and feel it a duty to thoroughly master and comprehend all the so-called *systems*, *parties* and *pathies*. But this would be *Eclecticism*, which has already appeared in the *arena*, claiming to be a distinct *party*. So far as the *name* is concerned, it is not objectionable, but commendable—what every accomplished physician is, eclectic. He culls and selects as his judgment dictates But when the term is applied to a party, as bigoted and exclusive as any other, and who insist that everything else in

therapeutics must be superceded by some especial dogma of theirs, it is undoubtedly inappropriately applied.

We are inclined to deny "Papal infallibility" to any *party*, *pathy*, or *assumed system*, and when men of the most profound scientific attainments, in their most comprehensive and liberal investigations, have mastered all within their grasp, *they* will be in no danger of that shallow egotism which supposes all beyond to be folly and imposture, but will be willing to admit any truth that may be found in any or all *assumed systems*. Fogyism has, perhaps, been responsible for the origin of these *systems*, yet justice to all parties demands that "Young Physic" be held up for inspection, in order that we may see upon what ground it sets up its claim for exclusive favor. As such we may name Botanic, Hydropathic, and Homœopathic. Eclectic is not mentioned because, 1st. It is a *misnomer*, as the name can not be properly applied to a party of exclusivists, (though it is true that much bigotry and exclusivism assumes this name). 2d. Because the Botanic is its sire, and is, perhaps, sufficiently transparent to enable us to look through it, and see the features and physiognomy of its offspring, and recognize their consanguinity.

But to return to these systems, we have, 1st. A party of *chameleon* name, changing its hues and titles like the "dying dolphin," the Botanic. The absurdity of forcing therapeutics to follow in the wake of every visionary hypothesis, and "do duty" alike for the "solidist," the "humorist," the "Broussaist," and the empirical "routinist," (by a sort of natural reaction, perhaps,) brought out the ignorance, the common sense, and in some instances, useful medicines of Samuel Thompson. His limited pharmacopœia and universal application of steam, originated the name *Steamers*. It will, perhaps, be just to admit that cures were effected, some of which possibly may have been beyond the reach of remedies in the hands of other practitioners of that day. In an enlightened community the ignorance and limited resources of Thompsonianism could not maintain a hold on public confidence. But

the Thompsonian or *Steam System*, in the hands of men of much more science than its founder, has progressed and improved far beyond the ideas of Thompson, and rising above the titles of Steamers and Thompsonians, has been designated as "Botanico-Medical."

Medical schools have also been acknowledged useful and necessary. Teaching, studying, and attempting to practice medicine, could not fail to have some effect upon them, and accordingly we find Botanico-Medical advancing still further beyond Thompsonianism, enlarging their resources and using many valuable remedies; but yet, making an outcry against some of the most efficient therapeutical means employed by the most eminent and successful practitioners, denouncing them as poisonous, and unfit to be retained in the officinal list. Perceiving that they could not rely on vegetable remedies exclusively, and that all minerals were not as bad as Thompson supposed, the title of Botanico-Medical was dropped and that of Physo-Medical substituted. This title, however, was rather awkwardly constructed, as *physo* signifies *air* or *wind*, and therefore, a *Physo-Medical* system must be rather too gaseous for solidity or dignity. After this defect had been discovered, Physo-Medical was laid on the shelf with Steam, Thompsonian, and Botanico-Medical, and *Physo-Pathic* is, I believe, taking its place, or has done so. But as this signifies a windy disease, or windy treatment, suggesting painful and colicky ideas, we "can't see" the improvement. Their bigoted exclusiveness and ignorance is seen in their idea of no-poison medicine. The non-poison platform is boasted of, and all are denounced who use "poison-medicine." If such a party would adhere to bread and water as their sole medicines, there would be consistency between their doctrine and practice. But when many of their drugs will kill even a well man in a short time, their theory becomes palpably absurd and inconsistent.

The non-poison theory would confine us to food and drink. By medicine we mean something not used as food, but de-

signed to modify the vital functions, and there is no such substance in nature which is not poisonous, if used with sufficient freedom. The distinction between medicine and poison is a distinction of degree, not of kind. Any medicine, if sufficiently concentrated, would be called a poison, and any poison if sufficiently subdivided or diffused, possibly may act as a medicine.

Snake poison is converted into medicine by the Homœopaths, and the most harmless medicines would be pronounced poisonous, if concentrated until a single grain would be a fatal dose. The idea that a medicine is desirable because it can be given in a large dose, or unfit to be used because it must be given in a small dose, is certainly a very crude theory. If a medicine is found beneficial, use it; if not, reject it. If it be good, the smallness of the dose should be no objection; it is certainly more convenient to carry an ample supply in a small pocket vial than to "fetch in an armful of herbs and a kettle to boil them in." It is undoubtedly right to reject everything which acts harshly, and generally produces ill-effects, but the "Botanico-Physo-Eclectic-Medicals" have gone beyond these rational limits, and rejected articles which, in their legitimate use, are both safe and beneficial.

The Hydropathic or Water-cure system, also possesses some merit, and so far as it goes should be incorporated among the resources of every intelligent physician. But when water is made the sole agent in the treatment, and when a contempt for all other therapeutical means is expressed, and an unwarrantable prejudice is instilled into the public mind against all medicine whatever, we feel inclined to reject this form of delusion and prejudice. But if we must be narrow-minded, if we must dwell on one idea alone because there is not room enough in our minds for more, water is, perhaps, as good a hobby as any other. But why the necessity for intelligent men to thus surrender their general knowledge and resources? We might as well resolve to live on one article of food, as bread, or potatoes, or rice, or corn, or oats, as confine ourselves

to one medicine. No doubt a Water-cure system would cure or relieve some cases, and so would a Lobelia-cure system, or a Podophyllin-cure system, or a Calomel-cure system, or a Steam-cure system, or a Brandy-and-salt-cure system. Thus every doctor might have his hobby, his own great cure-all. And there is no doubt that any single valuable drug in the whole *materia medica* would accomplish very much, if made a hobby, and pursued with energy and enthusiasm.

There is another hobby upon which respectable progress has been made, and which, like Hydropathy, has some merit, which is, mainly, that it has more fully demonstrated, than was ever done before, the power of nature, unaided, to overcome disease. It has also shown the enormous abuse of that *blind routine* practice, once so common. It may freely be admitted that Homœopathy, or more practically speaking, the use of infinitesimal doses, has the merit referred to. And if it was only added to the common stock of science, we would say to Homœopathy, as to Hydropathy, welcome! but unfortunately, these two worthy new-comers, after having been kicked out of the temple of Esculapius by the *old masters*, have got their spirits up, and each resolved that they will not only make their way into the temple, but will also reciprocate favors by kicking every body else out, and taking exclusive possession. Now against this, we protest, I should vote for the admission of Homœopathy and Hydropathy: Let them come in, and occupy as much ground as they can really cover. But we object to their turning anybody else out. When they undertake to reciprocate the arrogance of "Old Hunkerism" by the rival arrogance of "Young Hunkerism," they provoke our criticism. We are tempted to ask, What is this new system, which is to supercede everthing else, and fill the whole temple of Esculapius? It is only *similia similibus curanter*.

But when it comes with the demand that we shall surrender at discretion—give up our arms upon which we rely—we beg leave to look at their documents, and see if they have a right to make any such demand. Practically, Homœpathy demands

that you shall lay aside vigorous potential doses of drugs, and consent to use only little *globules* of sugar and milk, which have no medicine in them that can be detected by a chemist. Neither can it be detected in them by taste or smell; but by a process of reasoning it may be determined that it ought to be there, because the sugar has been in the mortar in company with the physic, and might have got infected with the qualities of the medicine.

If a lump of sugar was held for one moment over a vial of cologne, or linseed oil, and then swallowed, more than a homœopathic dose would be taken.

Perhaps it should not be denied that Homœopathy has effected cures, (*i. e.*, Homœopathy according to their theory.) But how? can the *rationale* be explained? It may be answered, that the mind, fully admitting the curative power of the medicine, may send a stream of electricity or other force along the nerves, to the diseased organ, and the *vis medicatrix naturæ* effects the cure. We know that we can cure (or rather aid nature to do so) by doses that we can see, and feel, and taste, and which produce plain, intelligible and powerful effects, in accordance with common sense and sound philosophy, and therefore should not give up a sure reliance for the speculative beauties of Homœopathy.

Supposing that these infinitesimal globules and tinctures—tinctures, did I say?—about as strong as a teaspoonful of salt in the Ohio river; supposing that these essenses, shadows and ghosts of departed Acconite, Belladona and Mercury, had all the power claimed for them? it would amount to just nothing at all upon a healthy constitution. A lively baby would swallow the whole contents of the Homœopathic laboratory—a hundred pills of a hundred different kinds, making in all ten thousand doses—and perceive as little effect as if it were sugar candy.

This very delicate and wonderful method of overcoming disease by these spirits of departed medicines, which are quite invisible and imperceptible to the healthy, are supposed to

become real "spirit rappers," when properly fitted to a disease; but how to fit them properly appears to be rather a delicate operation.

A learned Homœopathic author once declared that he would have cured one of his patients of an attack of pneumonia but for the fact that he had a hollow tooth in which the little sugar globule lodged, and consequently was unable to perform its great mission to cure the lungs. The wonderful powers ascribed to their doses is supposed to be developed by rubbing, by trituration in a mortar, or by shaking in a vial. How medicine is improved by shaking has never been explained. Should the patient be shaken, it might perhaps do him good sometimes. Hahnemann (who is almost worshiped by Homœopaths) declared that he rendered his medicines very powerful by shaking them; the longer he shook them, the more he stired up their wonderful powers, "until, by hard shaking, they became so furiously powerful as to endanger the lives of his patients," and he "was compelled to reduce the number of his shaking from ten shakes to two." It might, then, be asked, if a German dogmatist, who fancies because he has brought forward a new idea, (which, however, was originated long before his time; in fact, is found in the writings of Hippocrates,) shall be allowed by his mere arbitrary *dicta* to sweep away at one stroke everything accumulated by the therapeutic experience of ages, that his imaginary new principle may have sufficient room to display its beauty. It would be degrading to the profession to submit to such usurpation.

We would protest against cutting off any of our resources, water, potential concentrated drugs, infinitisimal medicated sugar, galvanism, animal magnetism, and all that can possibly be used with benefit. Whenever the physician resigns his freedom of choice, and abandons valuable resources, by joining a proscriptive party, he lowers his dignity as much as he diminishes his usefulness. Let us, then, proscribe nothing, reject nothing that can be made beneficial. Let physicians

ignore all proscriptive parties, but retain all they collectively possess. Let Hahnemann stand on the merits of his own globules, and others likewise on the merits of their respective dogmas; and not boastfully exclaim, like Paracelsus, the "monarchy of physic is mine." There is no monarchy in medicine; there is no "master builder;" all are but "journeymen mechanics," working slowly; some, indeed, have excelled others, each one adding a little, some of good material and some of bad. We have been working some twenty odd centuries, and yet not half-built the temple of *Esculapius*. He who would claim to have built the temple, is an imposter. The true physician, then, can become neither Pressuitzians, Hahnemanians, Thompsonians, Allopaths, or Eclectics; but intelligent medical gentlemen, who think for themselves, and "call no man master."

SELECTED.

ON HOSPITAL GANGRENE, AND ITS EFFICIENT TREATMENT.

By JOHN H. PACKARD, M. D., of Philadelphia.

During the past four months it has been my duty to see and to supervise the treatment of a great number of cases of hospital gangrene, occurring in two of the large military hospitals in the neighborhood of this city. The disorder supervened, in almost every one of these instances, upon gunshot wounds; it presented itself in different grades of severity, and in connection with original injuries varying much in seat and importance. From these extensive observations I have been led to adopt very positive conclusions as to several points in the pathology and treatment of this disease, which I think it but right to lay before the profession.

Let me premise by saying that in so doing it is not my object to claim originality for these views, although some of

them have never met my eye in print, nor do I know of their being held by others. But it is very possible that a like experience may have brought some of my fellow-laborers to adopt similar ideas. My own attention was strongly directed to the subject by Lieut.-Col. Le Conte, Medical Inspector, U. S. A., who suggested to me a plan of treatment based upon chemical views. This treatment, simplified as experience showed it could advantageously be, assumed the shape to be presently described.

As every one knows, who has read at all upon military surgery, this disease has prevailed in a most frightful form in the British army, and in some of those of Continental Europe, at different times. Such cases as are described by Blackadder, Boggie, and Hennan, by Guthrie and Macleod, have never yet come under my notice, probably, I think, because of the unquestionably superior *morale* of our army, as well as by reason of the better quality and more regular supply of their food. But no doubt can be entertained of the identity of the disease.

Phenomena.—Any open wound may at any time assume this character. A suppurating surface communicating with the atmosphere seems to be a requisite. I have never yet seen an abscess which at the moment of its being opened was the seat of this form of gangrene; nor has it ever occurred to me to see a wholly healed wound break out again with it. Usually the exposure to the air has been of some duration.

Wounds which have healed to a mere point may in a few days spread to several times their original extent. This is most strikingly seen in superficial shell-wounds; in one case of this kind almost the whole outer half of the thigh was thus converted into a ghastly and most offensive ulcer.

When the wound which begins to slough is somewhat wide and shallow, the skin seems to melt away or cave in, as it were, at the edges of the chasm; the epidermis around the margin becoming of a dead pearly white, while the skin below and just outside shows a faint pinkish blush. Another condition is apt to exist in deeper wounds, and especially in sinuses, the connective tissue sloughing so as to undermine the skin, which may or may not look inflamed and unsound.

A grayish-yellow, pultaceous, and horribly offensive material fills up these sores, and flows away like a thick purulent discharge. Microscopically examined, however, it exhibits none of the characters of "laudable" pus; consisting merely of the degenerated connective tissue of the part, with broken-

down pus-corpuscles and myriads of minute oil-drops. A few fine fibres, tangled and contorted, are seen, and sometimes here and there a pus-corpuscle less degenerated than the rest.

Swelling is rarely present in a marked degree, unless the wound passes through a fleshy part, such as the arm, calf, or buttock. Another local symptom, especially well pronounced in such cases, is a pungent heat, the temperature being so raised as to be actually quite unpleasant to the hand. If the surrounding atmosphere is at all cool, a steam arises from the surface of the wound. No doubt can be entertained, it seems to me, that this heat is the result simply of the active combustion going on in the part. This rise of temperature I have noticed to be confined strictly to the gangrenous surface. In a wound of large size on the inner side of the thigh, one portion of which was sloughing, while the remainder had been cleaned and was healthy, the difference to the hand held over each part successively was most striking. Pain may be wholly absent, but I have also seen it severe and wearing. The cause of the difference in this respect between different cases I do not know.

It would be difficult to exaggerate the offensiveness of the discharge from wounds in this condition of gangrene. There is a peculiarly nauseous smell over and above that of mere putridity, which I am inclined to attribute to the rancid state of the oil-drops mentioned as seen under the microscope.

One point remains to be noticed, which is the appearance of the surface of these wounds when they are cleaned out by vigorous sponging. A seeming exuberance of pale granulations, often resembling the surface of a bunch of small hydatids, is presented. But so from being exuberant, these granular prominences are merely those parts not yet attacked by the sloughing, and they protrude simply because the tissues between them have been destroyed.

This disorder is strictly local, as has been pointed out by Blackadder and others. It may exist for days, and destroy tissue to a wide extent, without affecting the constitutional condition to any appreciable degree. But this is only the case in men previously robust; generally there is more or less irritative fever, according as the system is more or less readily impressible. Other facts, however, show clearly the local nature of the lesion. One wound may be rapidly spreading and highly offensive, while another in the same limb is healing kindly. Nay, of the same wound one portion may be granulating and filling up, while the remainder of it is sloughing.

Should amputation become necessary, the stump will, if properly made and treated, do as well as in any ordinary case.

When the general system does become implicated, it is by reason of the exhausting effect of the local action, and of pain, and not because there is anything like infection. Perhaps this occurs in some cases, which pass into a typhoid state, but it is not common, and certainly not essential.

Causes.—This disease arises epidemically in hospitals, in single wards, or even in separate tents. Having once made its appearance, it spreads rapidly, unless great care is taken in the way to be presently pointed out. It is surely propagated, wherever the same basins or sponges are used indiscriminately for these and for other cases.

But these facts do not account for its origination. No disease should come on more spontaneously, to all appearances, than this often does—none could be more directly traceable to contagion in many cases. It has not yet been observed that any special atmospheric state is apt to attend its appearance, although it seems, as might *à priori* have been expected, that a high temperature favors the putrescent change. Eight or ten very marked cases have, however, occurred under my own notice within the past week (Oct. 20 to Oct. 27) at the Beverly Hospital, among patients in tents, and in a location seemingly free from any possible hygienic disadvantage.

It should be mentioned that the grouping together of grave surgical cases, and especially when these are in any degree overcrowded, seems to favor the breaking out of this affection. But on the other hand this condition may exist without the disease arising, and on the other the disease may be developed where the cases are mild and few. In the spring of 1863, while on duty as a visiting surgeon at the Satterlee Hospital in West Philadelphia, I had under twenty men, all convalescents, in a ward calculated to accommodate fifty, and yet two of the number were suddenly attacked with severe sloughing of their nearly healed wounds.

Prognosis.—This is almost always favorable as regards the saving of life—although a patient worn by previous disease might sink under the accession of this new burden. Again, the wound which assumes the gangrenous state may be so situated as not to admit of the needful treatment; penetrating wounds of the chest or abdomen, taking on this condition, have in my experience been uniformly fatal.

This disease may be fatal to a limb which but for it might have been saved; since it lays bare tendons, bones, nerves,

and vessels, often involving the two former, especially in necrosis. Hemorrhage is less common in these than would be supposed; it does not necessarily involve amputation, if the artery concerned can be cut down upon and ligated higher up, since the wound so made will do well. Such a course could not be pursued were the disease less purely local.

Treatment.—There are two indications always present in cases of this kind. First, all the putrid and putrescent matter must be removed from the wound. Secondly, means must be taken to prevent the recurrence of the sphacelation or necrosis, into which the tissues will surely run if not checked.

To fulfil the first indication, the forceps are sometimes all that is needed. My own custom is, to seize a portion of the gangrenous connective tissue, and then twist and roll it up, with traction, until it comes away as far as possible, without too great force. Sometimes it will either break or come away; but if it still resists, it must be cut away with a pair of scissors (a bent or curved pair will usually answer best), or with a knife. This must be repeated again and again, until all the tenacious putrilage has been removed. Rough sponging will still further cleanse the surface.

Chloroform or ether should be used in all cases where there is much pain or tenderness in the sore, or when the wound passes deeply through a thick fleshy part, or is undermined at its edges. *The whole surface of the wound should be reached and cleansed;* and the surgeon has not done his work if he stops short of this.

It will do no harm, after this cleansing, to "disinfect" the wound by washing it with the solution of chlorinated soda, with bromine, with a solution of permanganate of potash, or with any other preparation of the kind. But that this is necessary I do not believe, having seen cases in which it was omitted do perfectly well. The thorough cleansing by mechanical means is the main thing to be attended to.

As to the second indication, it is to be met simply by using as a dressing a preventive of oxidation. Sugar, a hydrate of carbon, which does not give up its oxygen, and which is well known for its preservative powers in the case of meats and fruit, is admirable for this purpose. Powdered white sugar is thoroughly and thickly dusted over the wound, or a thick syrup is put on like any other wet dressing, by saturating clean rags with it. I prefer the former method, the sugared surface being covered with wet lint or rags, kept in place by adhesive plaster, or by strips of bandage tied just tightly enough to keep their place.

Coal-oil, turpentine, or any other carbo-hydrogen, if pure, would answer, but the sugar is less offensive, and does not give pain. A mixture of pulverized charcoal with the sugar answers very well when the odor does not quickly disappear after the cleansing.

I believe that wounds still healthy may be prevented from becoming foul and gangrenous from the neighborhood of those which are in the latter state, by the use of sugar or any pure carbo-hydrogen as a dressing, and that the spread of hospital gangrene in a ward may be thus checked.

The cleansing may have to be repeated once, perhaps in some cases twice, before the wound assumes a healthy aspect, but whenever the whole surface can be gotten at the first time this will probably be sufficient. To prevent the spread of the disease by contagion, it is absolutely necessary that each case should have a special sponge and basin set apart for itself, and that these articles should be regularly and thoroughly cleansed after each dressing. Boiling water will effect this.

A few words as to the other plans of treatment in use for this disorder can scarcely be omitted.

Powerful irritants, such as the strong acids or alkalies, or the actual cautery, have been much employed. They depend for any good they may do upon the destruction of the surrounding tissue, and the chance that the ensuing inflammation may not take on a gangrenous form. I have no doubt that in some cases which have come under my observation life has been lost as the consequence of this cruel and random style of practice, although men have recovered in spite of it.

Strong astringents, vegetable or mineral, have been used by some surgeons; the persulphate and perchloride of iron are, I believe, the latest and most favorite of these articles. Although more rational than the former plan, this is an inefficient one in many cases, and is always more or less painful. It is besides much less cleanly than the one I have advocated.

Bromine, so successfully used by Dr. Goldsmith in the Western Military Hospitals is, like chlorine and iodine, a powerful disinfectant. But I can not help thinking that it was *the preliminary cleansing*, described by Dr. G., to which the benefit was really due.

Fermenting poultices are simply nasty, and at the same time useless.

Constitutional treatment can not be expected to check the disease, although it is sometimes indicated by incidental symptoms, and is of course in so far beneficial.

Before closing this paper, it may be right for me to repeat that Dr. Le Conte suggested to me the mode of treatment which has been set forth; his idea was that after the cleansing the permanganate of potash, in solution, should be thoroughly applied to destroy any remaining putrilage, and afterwards the sugar. Practical experience convinced me of the value of this plan, based upon chemical principles; and it was the want of a supply of the solution of the permanganate, which, compelling the omission of the second step of the treatment, proved it to be unnecessary.

In a notice of Dr. Goldsmith's "Report on Hospital Gangrene," etc., by Dr. W. F. Atlee, of this city, published in this Journal for Jan., 1864, the following remarks occur:

"We ourselves have had to treat hospital gangrene, and were entirely satisfied with the results obtained by the following local treatment: The putrid tissues were thoroughly removed; infiltration of the unhealthy secretions among the muscles and under the skin was prevented by the proper application of bandages, and a saturated solution of white sugar was poured upon the sore. We were satisfied with the effect produced by this treatment; we are certain that we should not have any reason to be so at another time, or in other places. Circumstances vary cases of disease as of everything else; they make them curable by simple syrup, or by the application of a simple ointment, or so violent as to defy the actual cautery, and nitric acid, and also, it is most likely, bromine itself."

The difference between these views and those set forth in the preceding paper we conceive to be evident. Remove the existing putrilage, and prevent the formation of more, and the disease is cured. I can not but believe that had my able friend just quoted, followed out his theory and his practice to their full extent, he would have given the plan he so sparingly commends his hearty indorsement. Having been myself an observer of the epidemic of hospital gangrene, which occurred at the Satterlee Hospital in West Philadelphia, in July, 1863, and to which allusion is made in the passage above quoted, I know that the disease as it then presented itself, and that which has come under my notice this summer, are one and the same. And I know that worse cases than have yielded to the simple treatment I have advocated, did not occur in that epidemic; I believe that worse cases could not anywhere be found, unless among men of debauched lives and ruined constitutions, the local poison was supplemented by an utterly

depraved systemic state. Under such circumstances, however, we go beyond mere hospital gangrene, which, as has been before argued, is a strictly local disease; it may even be cured in spite of other lesions severe enough to destroy life.

I beg to be excused for again urging the conviction that although hospital gangrene may disappear under the use of the actual cautery, of nitric acid, or of bromine, the happy issue is in such case in spite of the remedy, and not in consequence of it; that the *cure* consists in the removal of all the sloughing and dead tissues, and the *prevention* in opposing oxidation by means of a dressing with any substance which either contains no oxygen or which will not give it up. Once more I must express the entire confidence which a very extended observation has led me to bestow upon this theory, and the resulting line of practice.—*Am. Jour. of Med. Science.*

PERMANGANATE OF POTASH AS A REMEDY FOR DIPHTHERIA.

By LOUIS MACKALL, Jr., M. D., Georgetown, D. C.

Having used for several months past the permanganate of potash as a remedy for diphtheria, and being convinced of its great efficacy, I feel justified in calling the attention of the profession to the use of this agent in this fatal and hitherto unmanageable disease.

After using faithfully all the remedies, both general and local, which have been extolled for the cure of diphtheria, and having seen so little good result from their use, I had lost in great measure all faith in such remedies, and had come to the conclusion that the best treatment was to support the patient with nourishment and the free use of stimulants. On reading in the January number of the *American Journal*, an article by Dr. Samuel Jackson on the therapeutical application of a solution of the permanganate of potash and of ozone, it occurred to me that this agent might be beneficial in the treatment of diphtheria. Shortly afterwards I had an opportunity of making a trial of it in a severe case. A young girl about eleven years of age was seen by me after being sick several days. The tonsils, soft palate, and fauces were covered with an ash-colored deposit; the glands beneath the jaw were much

swollen, with frequent pulse and hot skin; she was treated for several days with chlorate of potash and the tincture of the chloride of iron. Muriatic acid and tincture of iron in equal parts, were applied locally. But finding the disease on the increase, I changed this treatment and used the permanganate of potash both internally and as a local application, the latter in the proportion of ʒj to Oj. She took a teaspoonful every three hours, of the strength of ʒj to water, Oiss. On the second day after beginning this treatment, the improvement was very marked, and she speedily recovered. The false membrane was detached and the mucous membrane presented a healthy appearance in three or four days.

Since then I have treated all the cases of diphtheria (some fourteen or fifteen) which I have seen with this agent, and am more and more convinced with every case, that we have in the permanganate a most valuable remedy. Such is my faith in its power to arrest the extension of the pseudo-membranous formation, and to remove it when formed, that I now feel little apprehension in any case if called to see the patient before the disease has extended to the larynx or paralysis has occurred. Indeed, in those almost hopeless cases in which it is evident that the disease has reached the larynx, as shown by suppressed cough and voice with paroxysms of intense dyspnœa, I have seen under its use three children recover. With a considerable experience in the disease I had previously known only one child to recover under similar circumstances. These three cases were all of the most unfavorable character; the membranous formation was abundant; the laryngeal symptoms very distressing. In all of the cases I expressed a very gloomy prognosis, as all similar cases, with the one exception above mentioned, had proved speedily fatal. In these cases I also used emetics, but I think the successful result is attributable to the permanganate, as I had used emetics in all such cases before without benefit.

When the disease has extended beyond the reach of this remedy locally applied, of course a successful result could not reasonably be expected from its use; but I believe that with this agent we can prevent diphtheria from progressing to a fatal termination provided the cases can be attended to before the larynx becomes involved.

Its tendency to attack the mucous membrane of the pharynx prior to its extension to the larynx, is characteristic of diphtheria, and I feel assured from my experience, that if the permanganate of potash is used in this stage, that it will not

only control its further development, but will speedily remove all traces of the disease by restoring the mucous membrane of the throat to a healthy state.

The inferences that it is intended should be drawn from the foregoing remarks are: that if diphtheria arises from a specific cause affecting the whole system, then the permanganate of potash may be regarded as the antidote to this poison; or if the fatal tendency is thought to be caused by or to be dependent on the local affection of the throat, then the local affection may be removed and the fatal tendency may be obviated by the use of this remedy.

It may be well to state that I have never seen any unpleasant effect from the use of the permanganate even when administered to young infants (the solution should be weakened by increasing the quantity of water to Oij, to permanganate, 3j in very young children); and I have observed that when locally applied it causes less distress than almost any other remedy.—*Am. Jour. of Med. Science.*

EFFECTS OF TROPICAL CLIMATES ON THE EUROPEAN CONSTITUTION.

Mr. Wm. Martin, late Surgeon Bengal Army, in an interesting paper on this subject (*The Medical Mirror*, Oct. 1864,) states:

It is a well established fact, that of those Europeans who make India their residence, a considerable proportion droop and die, or are forced to seek their native air, and with regard to those who become acclimatized, their progeny has, as far as I am aware, in no instance survived to the third generation, *i. e.*, no three successive generations of pure European race have been known to survive. The same, no doubt, would be the case with regard to the natives of tropical climates, who might come to reside in Europe.

"One of the first changes," he remarks, "caused by the removal of a European to a tropical climate, is that of the function of the skin; the perspiration being in most cases greatly increased, sometimes to an inordinate degree. If it be only moderately increased, as is the case of Europeans arriving in India during the winter, when the average temperature may equal that of one of our cool summers, and

with those who have become acclimatized, on the approach of each hot season, it affords the greatest relief to the system. An increased amount of perspiration, compared with what obtains in cold regions, for residents in warm climates, must be considered the normal condition. The secretion of the liver is also, in a large majority of cases, increased in the early period of residence, and this is to be considered always as a morbid process to be carefully watched, and, if possible, guarded against; and where it occurs, it must be reduced within due bounds, or it will become a fruitful source of disease, at first functional, eventually, in all probability, organic. It is with respect to this function of the liver that so much caution is required by visitors to warm climates, for on its perversion depends in great measure the amount of derangement of health which occurs among them. On the other hand, the action of the lungs becomes lessened, chiefly if not entirely, in consequence of the increased action of the skin. The great effect this must have, we perceive, when we reflect, that although from the rarefaction of the atmosphere in a hot climate, the lungs must become expanded to a certain extent, yet that this rarefaction is occasioned solely by the increased temperature, and not by diminished atmospheric pressure, as we find to be the case in elevated regions. Consequently the amount of oxygen to be taken in is rather diminished than otherwise, and all the parts concerned in the process of respiration are not called into more vigorous action as they would be in a hilly country, but the reverse; the result of this and of the increased amount of perspiration, is that the work of the lungs is lessened, and this to a considerable extent; so much so, that a most material relief is afforded to the entire system, and if the new arrival be very cautious as to his habits, and particularly the diet, and only so much food of the proper kind be taken as will be digested and assimilated with ease, and the excretions through the lungs, skin, liver and other organs, only task the power of those organs moderately, he may perhaps have nearly as good a chance of preserving health as if he continued to reside in Europe. Should he be naturally inclined to pulmonary disease, the amount of relief to the system afforded in India by the diminished pulmonary action is so great, that he often will enjoy better general health than he did in his native clime, and even will have his life preserved by his change of residence.

The influence of the increased heat of tropical countries

upon the skin, in augmenting the amount of perspiration, is so well known, that it does not require expatiating upon; but we may remark that this increase may exist, and often through bad management to a prejudicial extent. It is possible to exceed in the amount of fluid drank; the perspiration, after being inordinately increased, may be suddenly checked; and this counteraction may be in its ultimate effects as dangerous as another condition of the skin, which leads to consequences more directly fatal, in which the perspiration, at a time of excessively sultry heat, becomes suppressed, as is seen to be the case previously to attacks of sunstroke, or insolation; more properly called heat asphyxia. In persons of intemperate habits, an inordinate perspiration is often produced by the very indulgence in intoxicating substances. The system is then left in such a condition that it cannot resist malarious or other noxious agencies; some evil influence will enter the body through the open pores of the cutaneous surface; and the effects of this will be much aggravated by the cooling of the skin, which takes place subsequently, and the rapid contraction of its surface, which renders it incapable of performing its function effectively. In this way seem to arise a large proportion of the deadly diseases so rife in tropical climates: those especially which arise from malaria, also non-malarious dysentery, continued and remittent fevers, cholera, etc.

The liver is, next to the skin, the organ most altered in its action by transference of residence from a cold to a hot climate. Its action is almost always increased to a certain extent, but if great care be taken by paying due attention to regimen, etc., this will pass off, in most cases, in a short time, if the new arrival commences his residence in the hot season, and the skin, with the action of which that of the liver is vicarious, acts freely for a continuance. If he begins his residence in the cold season, he may escape any over-action of the liver altogether; or if it occurs, it will be in less degree, and will be more tractable than in the other case. This increased action is of the nature of functional derangement, and is no doubt attributable to hyperæmia of the organ. This causes at first increased secretion simply, with sympathetic functional derangement of the stomach, and probably of the skin, lungs, etc. If this be speedily checked, and everything is favorable as regards season, and non-malarious condition of the atmosphere, etc., things will return to their original state; otherwise, structural degeneration may occur; but more often than that, there remains a functional derangement of the

liver, involving changes of other functions; particularly those with which the liver sympathises; alteration of the constitution of the blood, etc. The derangement is often of such a serious nature, that a proper acclimatization in India is rendered impossible, and change of climate of some kind becomes necessary. In milder cases, the over-action of the liver is succeeded by a corresponding torpor; and this again, while the constitution retains its vigor, by a fit of over excitement; these opposite conditions alternating for some time. Consequently, there is always an irregular and vitiated state of the biliary secretion, with its necessary concomitants, impairment of the nutritive and nervous functions of the body generally. This state of hyperæmia of the liver, although produced in the first instance by increased temperature, is kept up very often by local influences, such as produce malaria. In fact, it exists to a greater extent in comparatively cool weather, as in the rainy and cold seasons in India, than in the hottest. In few cases, however, would the exciting cause act, but for the predisposition caused by the increased temperature. Again, in addition to heat, it seems that there must be some influence which arrests the action of the skin, for it has been remarked that in seasons in which the heat has been great, but without moisture, and consequently in which there has been no impediment to a very free action of the skin, there has been an unusual freedom from congested livers. There is no doubt, however, that long-continued heat, even if dry, will of itself, under certain circumstances, produce a state of hyperæmia.

Acute hyperæmia, or inflammation, often, according to the nature of the exciting causes of disease applied, leads to structural changes, abscess, fatty and other degenerations, etc.; with these may be conjoined the effects of fevers, dysentery, dangerous affections of the kidneys, spleen, etc. Sometimes, there is a protracted condition of chronic hyperæmia, which is too often known only by its effects. The patient experiences nothing perhaps but a general feeling of discomfort, and a state of torpor of the mind and of the functions of the nervous system, and of the principal organs, while organic changes are taking place, which will often be found to be irremediable. Frequently the disease commences in a state of sub-acute hyperæmia, in which there is pain, but not of a severe character, little disturbance of the stomach, only torpor of the chylopoietic functions, with some degree of pyrexia; and this state may merge, according to the nature of any re-

applied exciting cause, such as errors in diet, the influence of heat or cold, or wet, or any combinations of these on the patient's peculiar constitution, whether irritable or torpid, into an acute or chronic state of inflammation or hyperæmia. The final results are increase of volume of the liver, sometimes to an enormous extent, or hepatic abscess or exhausting diseases of the bowels; the only chance for saving life being an early change of air, the removal of a European to his native, or at any rate, a milder climate, being, with some exceptions, the most likely means to lead to a restoration of health.

ON THE PATHOLOGY OF DEPOSITS OF URATES.

By DR. GEORGE HARLEY,
Professor in University College, and Assistant-Physician to University College Hospital.

Deposits of Urates are of a yellow or pink color, according to the amount and kind of urohæmatin present in the liquid. The higher the color the more febrile the state of the body. At one time their presence in the urine was regarded as a sign of the crisis of disease, and hence they received the name of critical discharges. Modern investigation has, however, proved that they can not always be looked upon in this light, as they may also appear under a variety of conditions, which, although abnormal in themselves, are not truly diseased states, according to the usual meaning of the word. Thus, for example, urates may be deposited in the urine after a slight attack of indigestion, the result of over eating or drinking. Great exertion, especially if accompanied by profuse sweating will also cause them to appear. Hence we find them present in the urine after a fatiguing walk, a long day's hunting, or even after a ball, or other such occasional amusement, especially if it has been associated with much mental excitement. Hard study, and even a fright, will in some persons be followed by a deposit of urate of soda. A sudden change in the mode of life is a very common cause of their appearance, as, for example, confinement in town to country people, or a few days' residence in France to an Englishman unaccustomed to French dishes. Under none of these circumstances can the deposit be said to indicate a state of disease. It does nothing more than denote a temporary abnormal condition of the sys-

tem which may soon disappear without treatment. If, however, the deposit, instead of being merely temporary, lasts for some days, that of itself would denote that something more than a mere ephemeral derangement of the system is present, and may deserve immediate attention. A deposit in the urine is always a sign of something being wrong, and although, as we have seen, it may occur from very trivial causes, whenever it takes place without appreciable cause, in the otherwise apparently healthy, it is a sign not to be disregarded, as, under such circumstances, it is not unfrequently either the forerunner or associate of gravel or stone. Uric acid in some form or other is the commonest ingredient of all calculi, and there is no period of life exempt from them.

Urates are a very common deposit in the course of acute disease, and they even seldom fail to recur at some period or other in the course of chronic affections. It is, however, only in diseases of an acute, febrile or inflammatory type that their sudden appearance can be regarded as indicative of a crisis. Their sudden appearance is due to an important change having occurred in the condition of the patient, and in general, though not always, it is a change for the better. Such, for example, is observed to occur in cases of gout and rheumatism where the climax has been reached. So also in pneumonia and pleurisy when re-solution and absorption commence.

Should a patient, not laboring under any febrile or inflammatory affection, be every now and then troubled with a pink deposit in the urine without any assignable cause, it will be found, in almost nine cases out of ten, that he is suffering from some chronic affection of the heart, liver, or spleen, with which is associated a tendency to gravel. In all such cases, therefore, steps should immediately be taken to counteract this disposition by the administration of alkaline tonics. Should there, however, be any counter-indication to the correct alkaline treatment, those acid salts are to be employed which, during their passage through the body, are converted into alkaline carbonates—such, for example, as citrates, tartrates, lactates, and acetatates. Every now and then an exceptional case may arise, where a mineral acid tonic is demanded; under such circumstances the above rule may be departed from, and the case treated according to its special requirements.

It not unfrequently happens that there are crystals of free uric acid scattered among an amorphous desposit of urates. This is more frequently the case in the course of chronic than of acute affections, and generally arises from there being an

excess of acid in the urine, which has combined with some of the alkaline base and set a portion of the uric acid free.

The crystals of uric acid form on the bottom and sides of the vessel as the urine cools, and, if large they may be readily detected by the naked eye, in consequence of their yellow, red, or brown color. Uric acid, like urea, when crystalized in urine always takes up a part of the urohæmatin or any other coloring matter that may chance to be present. So that, the paler the urine, the less colored are the crystals; the darker the urine, the more colored the crystals. In abnormal urines containing blue, black, or saffron-colored pigment, the uric acid crystals are blue, black, or yellow; as in these variously-colored specimens now before you. The crystals are easily recognized by the naked eye, if the urine be put in a wine-glass and the deposit allowed to fall to the bottom.

Uric acid is not necessarily in excess when it crystalizes spontaneously—though that is the general rule. It has just been said that an excess of free acid induces its crystalization. I may now add that it is also deposited when from any cause the proportion of alkaline base is abnormally diminished. This arises from the circumstance that uric acid is much less soluble than any of its salts, even the urate of ammonia included.

The daily amount of uric acid excreted varies considerably in disease. It is generally in excess during the course of all fevers (yellow fever excepted), exanthematous affections, and inflammatory diseases. It has been found doubled in typhus (Parkes), greatly increased in small-pox, as well as considerably augmented in pneumonia. In certain diseases crystals of free uric acid are rpontaneously deposited in the urine. This is more particularly the case in hepatic, cardiac, and splenic diseases.

In liver affections there is frequently a spontaneous deposit of free uric acid among the amorphous urates, which, as already said, are so common in those affections. This is more particularly observable in cancer of that organ, in which case, too, the uric acid is generally in excess;—a fact frequently made use of in diagnosis, for in non-malignant hepatic disease especially towards its latter stages, the uric acid is found to be remarkably diminished.—*Med. Times and Gazette, May* 28, 1864, *p.* 584.

EDITORIAL AND MISCELLANEOUS,

RUSH MEDICAL COLLEGE.

The Commencement Exercises of the Twenty-Second Annual Session of Lectures in Rush Medical College, were held on the evening of the 25th of January, the graduating class numbering 108. The address was given by Prof. Carr, of the Wisconsin University, who, during the temporary absence of Prof. Blaney, in the Medical Service of the Army, has given the course on Chemistry in a manner most acceptable to the class, and to elicit from the Trustees and the Faculty of the College the highest commendation. Of the rare excellence of the Address, its correct teaching, scholastic diction, depth of thought, and beauty of illustration, we need not speak, as we hope to present it to our readers in the pages of the *Journal*. The session thus happily brought to a close, was commenced under the brightest auspices, which, in its progress, never for a moment were overcast.

The Faculty labored, as they always have, in a spirit of perfect harmony, and with scrupulous fidelity to what they conceived to be for the best interest of their class. The lectures were given in their regular order, without change, interruption, or derangement. Of the class—the largest the College ever welcomed to its teachings—we speak with pleasure, not unmingled with pride. A somewhat extensive observation has not brought to our notice one better endowed with native capacity or possessed of higher scientific attainments than this. As a whole, they were men of superior character—their deportmen on every occasion received from all the highest praise, and they evinced an interest in the lectures that made them attentive and constant listeners. It is

upon its Alumni that the reputation, success, and usefulness of the School rests, as upon a sure foundation, and the final examination of the graduating class made the Faculty incorporate them into this body without fear that its reputation would suffer thereby. All were blessed with a good degree of health, and the course was in every way satisfactory to both teachers and pupils.

The following named gentlemen received the Degree:—

NAMES.	SUBJECT OF THESIS.
W. R. Adair,	Gunshot Wounds.
J. Madison C. Adams,	Milk Sickness.
Henry Allen,	Attraction as Applied to Animal Organism.
R. M. Allen,	Milk Sickness.
W. C. Baird,	Pneumonia.
Braxton Baker,	Digestion.
Zopher Ball,	Fractures.
John Becker,	Uterine Hemorrhage.
Newton Baker,	Pneumonia.
C. R. Blackall,	Mental Complications in Disease.
E. J. Bond,	Continued Fever.
D. W. Bosley,	Etiology.
W. E. Bowman,	Shot through the Heart.
James G. Boardman,	Hospital Gangrene.
J. W. Brown,	Gun-shot Wounds.
W. H. Bright,	Diphtheria.
J. G. Blanchard,	Gonorrhœa.
C. H. Brunk,	Typhoid Fever.
C. H. Carlisle,	Bilious Fever.
E. P. Catlin,	Variola.
W. E. Chamberlin,	Scarlatina.
H. F. Chesbrough,	Pain.
Frederick Cole,	The Rational Physician.
Samuel Cole, Jr.,	Varicose Veins.
H. N. Clark,	Pneumonia.
J. L. Congdon,	
J. Cooper,	Conjunctivitis.
John Cotton,	Camp Diarrhœa.
Clinton Cushing,	The Bile.
M. Morton Dowler, Jr.,	Osteo-Genesis.
A. J. Darrah,	Auscultation.
S. A. Davison,	Inflammation.
S. W. Dodd,	Etiology.
A. C. Douglass,	Enteric Fever.
A. S. Ehle	Cynanche Trachealis.
Andrew J. Eidson	Opium.

NAMES.	SUBJECT OF THESIS.
Samuel S. Elder	Typhoid Fever.
Samuel T. Ferguson	" "
S. A. Ferrin	Pseudo-Membranous Croup.
Henry A. Folger	Therapeutical Agents.
O. D. Ford	Pernicious Fever.
J. H. Foster	Conservative Medicine.
Samuel Galloway	Dysentery.
H. T. Godfrey	Small Pox.
R. Romanta Gaskill	Rubeola.
J. Thomas Hale	Typhoid Fever.
J. M. Hurrah	Criminal Abortion.
Thos. C. Hance	Typhoid Fever.
A. P. Herndon	Intermittent Fever.
Wm. H. Hess.	Causes, Symp. and Treatment of Inflmmation.
Smith H. Hess	Scarlatina.
J. W. Herdman	Inflammation.
Francis M. Hiett	Intermittent Fever.
H. Edward Horton	Blood in Disease.
Geo. W. James	Phthisis.
Merritt S. Jones	Erysipelas.
David R. Johnston	The Prostrate Gland.
Charles Kerr	Cholera Infantum.
G. F. Keiper	Placenta Prævia.
W. J. Kelsey	Necrosis.
John L. Kite	Hospitals.
Chas. Ed. Kuester	The Spleen.
C. E. Lamon	Milk Sickness.
J. H. Leal	Prophylaxis.
Josiah Lee	Erysipelas.
C. J. Lewis	"
A. W. Lueck	Respiration.
Carl J. Lucas	Sterility.
W. B. Lyons	Spotted Fever.
Isaac L. Mahan	Typhoid Fever.
J. G. Meachem, Jr.	Albuminuria.
L. B. Morrow	Natural Labor.
William A. Morse	Camp Diarrhœa.
G. D. Maxon	Cerebritis.
William M. Newell	Man as a Machine.
M. W. Nesmeth	Intermittent Fever.
Joseph Otto	Blood.
William P. Penfield	Pneumonia.
John W. Powell	Gonorhœa.
Joseph L. Prentiss	Blood.

NAMES.	SUBJECT OF THESIS.
G. W. Priest	Evidences of Gestation.
Charles H. Quinlan	Preservation of the Teeth.
Lafayette Redmon	Pneumonia.
A. J. Rodman	Potassium.
C. B. Reed	Diphtheria.
Flavel Shurtleff	Diabetes.
J. L. Shepard	Variola.
Emery Sherman	Hygeine.
Ashbury E. Smith	Diphtheria.
W. H. H. Smith	Typhoid Fever.
M. S. Stahl	Digestion.
G. A. Stevenson	Management of Natural Labor.
D. Hedrick Stratton	Toxæmia.
G. C. Smythe	Military Hospitals.
J. L. Trousdale	Progress of Medical Science.
John W. Trueworthy	Delirium Tremens.
Henry Van Buren	Dropsy.
G. W. Van Zant	Inflammation.
Theodore Wild	Vis Medicatrix Natura.
Joseph H. Wilson	Management of Natural Labor.
Horatio B. Withers	The Accouchuer.
George Worsely	Typhoid Pneumonia.
O. P. B. Wright	The Circulatory System.
Charles Young	Fever.

The *ad eundum* degree was conferred on the following named gentlemen:

Martin Baker, M. D., California.
D. W. C. Denny, M. D., Indiana.
W. H. Dubler, M. D., Illinois.
N. Wright, M. D., Illinois.

TREATMENT OF TAPE-WORM WITH ELM BARK.

By J. R. DOWLER, M. D., of Beardstown, Ill.

The subject of this notice is a daughter of Mr. Eb. Fish, of Beardstown, Ill., about six years old. The only point of special interest in the case, consists in the efficiency of the remedy—to me perfectly new, and accidentally brought to my notice—which was used in its treatment.

I was treating a little brother of this patient, in the latter

part of last July, a part of my prescription for whom was, as a drink, the mucilage of elm bark, made by putting pieces of the solid bark into water. The little girl was seen to be frequently eating portions of the bark during the day; the next morning, upon my visiting the boy, the mother, with much anxiety, showed me a vessel containing something that had that morning passed the little girl's bowels, with bits of the elm bark, enveloped in mucilage, which, upon examination, proved to be about three feet of tape-worm. As I supposed the passage of the worm was accidental, and had occurred simply from the looseness caused by the bark, I proceeded to prescribe what *I* supposed a much more potent anthelmintic, a large dose of turpentine and castor oil. The turpentine and oil were given several times during the three consecutive days causing pretty active purging, but with no appearance of any portion of the worm. The girl being slender, and of irritable temperament, I was forced to desist from further active medications; and partly to allay irritation of the bowels, and partly to test the influence of the bark on the worm, I directed that she should resume the use of the bark as before, by chewing and swallowing it in moderate quantities.

On visiting my *new* patient the succeeding morning, I was shown portions of the worm, mostly in separate joints, that had been passed over night. Feeling now some confidence in the anthelmintic powers of the elm back, I directed the continued use of it, in the solid form, as before, while there should be any portions of the worm passing. In my daily calls, for some days, I had the satisfaction to learn that portions of the worm continued to pass each day, and sometimes several times a day.

I now ceased to visit my patient, intending only an occasional call; but my confidence in the efficacy of *elm bark* being so well established, I advised its use to be continued, even for two or three days after any portions of the worm should be seen in the evacuations. The portions of the worm expelled, even the separate joints, were alive, showing more

or less motion; a sense of their presence in the rectum, from their action, seemed to urge the patient to go to stool for their removal.

Having given direction for the links or joints to be counted care was taken by the mother to do so, and from my notes of the case, taken on the 17th of September, 1858, I find that during about seven weeks of the intervening time there had been expelled, by estimate, (taking the average lengths of the joints,) about 45 feet of the worm. At this time there had been no portions passed for two weeks, during which time the use of the bark had been omitted. The head of the worm, with about fifteen inches of the body attached, had been expelled; but thinking that all portions of the worm or *worms* might not have been removed, I advised that the patient resume the use of the bark. The next day after doing so, further portions came away, among them one about six feet in length tapering to a thread-like termination.

The next time I took notes of the case was March 23, 1859, at which time my estimate of the entire length that had been expelled footed up to 135 feet, whether of *one* or more worms I am unable to say, as in the portions I saw there were a head and tail of what I supposed one worm. Since the last estimate there have been joints occasionally evacuated.

This patient when first treated was thin in flesh—had been growing so for some two years—attended with the usual nervous symptoms, startings out of sleep, variable appetite, etc., but with no great departure from good health.

Some time during the autumn of 1863, Charles Wells, a discharged soldier, applied to me for treatment for "fits," as he called his disease, stating he had been discharged from the service on account of them. He stated that while under treatment for the "fits" by the regimental surgeon, he had discharged some small portions of tape worm, after which the surgeon treated him actively with the view of removing more of the worm, but without success.

His "fits" (epileptic) continuing to recur frequently, I

supposed they might be caused or sustained by unexpelled tape worm, and being desirous of further testing the powers of the elm bark, as an anthelmintic, I at once put him on the use of it, directing him to chew and swallow it in considerable quantities, using the brittle, thick kind of fresh bark, and directing him, in case his bowels should not be relaxed by the bark, to use small doses of oleum ricini to maintain that condition, without any restrictions as to his diet or habits of living. As he resided about eight miles from my place of residence, I requested him to report to me only occasionally.

In about five or six days, he called to see me again, stating that on the second day after commencing the use of the bark, portions of worm, mostly in separate joints, commenced coming away, and continued to do so at nearly every stool, to the time of this report of his case; he having had to use occasionally a little castor oil to promote laxity. I ordered the continuance of the same course while any portions of worm should appear in the evacuations.

Two weeks from his first report, he called again, bringing with him about seven feet of worm, tapering in width from about half-an-inch to a mere thread-like termination. He also stated that there had been daily evacuations of portions of worm, in short pieces, but mostly in separate joints, frequently passing off involuntarily, while walking about, as it appeared by the accumulation of the joints, with the elm mucilage, within the anus. This was the last report he made of his case, as after this he passed beyond my range of observation.

The foregoing, I think, must be accepted as proof that this bland agent possesses properties that make it a very efficient tape worm expelling substance.

As to the influence of this very bland agent in the dislodgement of the tape-worm, in these cases I think there can be no doubt, whatever may be the *theory* of its action.

The mode by which this parasite maintains its position must

be by its verminous contraction, and adaptation of its flat surface to the inner surface of the bowels, thus preserving itself from being carried along with their fœcal contents and cast off. That it should maintain its position by the force of *suction*, exerted by the mouth, as some writers have supposed, would seem to be absurd, when the great length of the animal is considered, and the forces in operation tending to its removal. The passage of portions of the worm so promptly on the use of the bark, and the ceasing to do so on its discontinuance—even while active anthelmintics were used—leave no room to doubt its effectiveness in this case, at least, as a worm expelling agent.

It seems probable that the bark, with its thick mucilage, so interposes between the animal and the inner surface of the bowels as to prevent its lateral grasp on their surface, in consequence of which it is compelled to yield to the forces naturally operating, and is carried out with the discharges. But, as my object was simply to state the practical *facts* in the cases, I will offer no further reflections.

COUNTER-IRRITATION WITH TINCTURE OF IODINE IN NEURALGIA.

In a clinical conference at the Children's Hospital in Paris, M. Bouchut relates several cases which illustrate the efficacy of this mode of counter-irritation in cases of neuralgia.

The first case related was that of a lady aged fifty, who for six months had been prevented by intercostal neuralgia from wearing stays. The painful region was painted over every day with tincture of iodine during a week, and at the expiration of that period a complete cure of was effected.

Another, and very corpulent lady, had for three years suffered from a stitch in the eighth intercostal space, in front of the short ribs. The same treatment was instituted, with perfect success.

A dyspeptic and hypochondriac subject affected with præcordial neuralgia, considered himself threatened with diseaes of the heart. Daily applications of tincture of iodine were prescribed, and the pain subsided; a relapse took place, and again the remedy, perseveringly resorted to with sufficient energy to cause desquamation, removed the neuralgia, which then disappeared altogether.

In some cases of obstinate intercostal neuralgia the patients imagine the symptom to be the indication of pulmonary tuberculosis. A lady, subject to bronchitis, had for twelve months suffered from a neuralgic pain of this description, and conceived herself to be consumptive; she resorted, by advice, to the Eaux Bonnes, but returned to Paris without having experienced any improvement. M. Bouchut applied the tincture of iodine, relieved the pain, and the much-dreaded thoracic disease was cured at the same time.

Neuralgia of the breast is to many women a cause of very great uneasiness, especially when the organ contains the small indurated lobules which M. Velpeau designates under the denominations of adenoma, or irritable tumor of the mamma. In these cases the patients are haunted by the fear of cancer, and M. Bouchut has had several opportunities of testing the efficacy of the tincture of iodine; applications daily repeated for eight or ten days have often succeeded in calming the pain, and in reassuring the patients.

In another case of a singular nature the neuralgia was accompanied by delusions of the sense of hearing, and the pain was so intense that the sufferer, tormented by hostile imaginary voices, and much alarmed by her symptoms, seemed bent on self-destruction. M. Bouchut removed the pain in a few days with the tincture of iodine, and this lady has since recovered from her melancholy mental condition.

M. Bouchut adduced several cases from which it appears that all varieties of neuralgia may be benefitted by the treatment he recommends.

A little girl was afflicted with supra-orbital neuralgia; and for three days in succession tincture of iodine was applied over the brow to a surface not exceeding the size of a sixpenny piece, and a cure was effected.

M. Bouchut further related two instances of hemicrania, with photophobia and vomiting, in which the symptoms yielded to the same remedy. He also brought forward a case of sciatica observed in a naval officer; the pain was chiefly apparent at the head of the fibula and near the tendo-Achilis.

Both regions were touched with the tincture, and the sciatica disappeared.

Blistering might possibly have proven equally beneficial; but the application of blisters is not always possible, and the tincture of iodine is a valuable and convenient substitute.

Thus, when M. Bouchut was attached as physician to the Hopital Sainte-Eugenie, he was consulted by a lady, residing at Charenton, for neuralgia in the occipital region. The patient was naturally desirous of preserving her hair, and instead of a blister, tincture of iodine was prescribed. The desired effect was produced after desquamation of the cuticle, and the hair was not injured.

As an instance of numerous and successive attacks of neuralgic pains, we may adduce the instance of a lady who, during her monthly period, wearing a crinoline and insufficient under-clothing, caught cold; the menses were checked, and retro-uterine hæmatocele followed. She was treated in an appropriate manner, and recovered her health; but pains supervened in the pelvis, between the shoulders, and in the intercostal spaces. The interscapular neuralgia had lasted eight months, when by M. Bouchut's advice, tincture of iodine was applied every day for a week; the treatment was very painful, but its results were perfectly satisfactory. Iliac neuralgia subsequently occurred; the same remedy was resorted to, but not with sufficient perseverance to secure permanent relief. Indeed, the method cannot be successful unless a predetermined action is induced, which hitherto can only be estimated by desquamation of the cuticle.

This is not a new mode of treatment. In pulmonary consumption, and in chronic pleurisy, the same procedure has been highly recommended for the relief of the pains which frequently accompany these affections. The method was introduced into practice by M. Blache, has since been very generally adopted, and is now acknowledged to be highly serviceable. This eminent practitioner, and also M. Van Holsbeck, in Belgium, and M. Magne, in Paris, have substituted with much benefit, tincture of iodine for the blisters formerly applied around the orbit, for the purpose of removing the photophobia which accompanies scrofulous ophthalmia, and interferes with the needful inspection of the eye-ball. This object is most satisfactorily attained by painting over the lids, forehead, and temples every second day with the tincture, and the tendency of blistered surfaces in hospital to become the seat of diphtheria is thus ingeniously neutralized.

ORIGIN OF BRANDY.

Brandy began to be distilled in France about the year 1313, but it was prepared only as a medicine, and was considered as possessing such marvellous strengthening and sanitary powers that the physicians named it "the water of life," (l'eau de vie,) a name it still retains, though now rendered, by excessive potations, one of life's most powerful and prevalent destroyers. Raymond Lully, a disciple of Arnold de Villa Nova, considers this admirable essence of wine to be an emanation from the Divinity, and that it was intended to re-animate and prolong the life of man. He even thought that this discovery indicated that the time had arrived for the consummation of all things—the end of the world. Before the means of determining the true quantity of alcohol in spirits were known, the dealers were in the habit of employing a very rude method of forming a notion of the strength. A given quantity of the spirits was poured upon a quantity of gunpowder in a dish and set on fire. If at the end of the combustion the gunpowder continued dry enough, it exploded, but if it had been wetted by the water in the spirits, the flame of the alcohol went out without setting the powder on fire. This was called the proof. Spirits which kindled gunpowder were said to be above proof.

From the origin of the term "proof," it is obvious that its meaning must at first have been very indefinite. It could serve only to point out those spirits which are too weak to kindle gunpowder, but could not give any information respecting the relative strength of those spirits which were above proof. Even the strength of proof was not fixed, because it was influenced by the quantity of spirits employed—a small quantity of weaker spirit might be made to kindle gunpowder, while a greater quantity of a stronger might fail. Clark in his hydrometer, which was invented about the year 1730, fixed the strength of proof-spirits on the stem at the specific gravity of 0.920 at the temperature of 60 degrees. This is the strength at which proof-spirit is fixed in Great Britain by Act of Parliament, and at this strength it is no more than a mixture of 49 pounds of pure alcohol with 51 pounds of water. Brandy, rum, gin, and whiskey contain nearly similar proportions.

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ORIGINAL COMMUNICATIONS.

OFFICIAL INVESTIGATION OF THE CHARGES PREFERRED AGAINST J.W. FREER, M.D.,

Surgeon of the Board of Enrollment, First District of Illinois, by the Homœopathists of Chicago.

Considerable curiosity having been manifested in various quarters to ascertain the facts in the case of the trial of Surgeon Freer, on the charges preferred against him with regard to the performance of his duties as Enrolling Surgeon in this district, by the Homœopathic guild of Chicago, we have endeavored, with success, to obtain a copy both of the charges and testimony brought before the Court, which in all their material parts we now lay before our readers. Although from its extreme length it is impossible to publish it *in extenso* in the pages of the *Journal* the reader is assured that no part of the evidence, or facts bearing on the case are omitted.

The specifications against Dr. Freer are contained in the following letter:

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BRIG.-GEN. JAS. B. FRY, Pro.-Mar.-Gen., U. S. A., Washington, D. C.:—

SIR—The undersigned, a Committee appointed by a fully attended meeting of the Homœopathic Physicians of Chicago, respectfully represent, that the practitioners of our School in this city number more than thirty regularly educated physicians and surgeons, whose diplomas emanate from the most reputable Medical Schools in this country, and whose practice embraces the most wealthy, influential, and enlightened portion of our community.

We therefore claim that we are entitled to the rights and privileges appertaining to the calling, and to protection from our Government against insults and abuse at the hands of its officials.

J. W. Freer, M. D., Enrolling Surgeon of this District, has been guilty of refusing to receive or consider our certificates of disability, while requiring such from the physicians attending the applicants, on the sole ground that they emanate from Homœopathic Physicians, thus in effect forcing the parties to employ Physicians of the Allopathic School, in order to obtain the exemption to which they are entitled. He has embraced the occasion of a presentation of our certificates, to insult both us and our patrons in the most wanton and brutal manner.

He has, in some instances, endeavored to make his official position subservient to his private interests, by making his decisions in favor of exemption depend upon an interested relation of himself to the applicants as patients.

Finally, the said Officer is altogether unacceptable to our community, being personally obnoxious, by reason of his entire ignorance of good breeding, his deficiencies in education, and his consequent unofficerlike and ungentlemanly behavior.

For these reasons, which we pledge ourselves to sustain by abundant and satisfactory evidence, we respectfully request his immediate removal from office.

Committee. { G. D. BEEBE, M. D., Med. Director Staff of Maj.-Gen. Thomas.
N. F. COOK, M. D.
A. E. SMALL, M. D.

On the basis of this communication, the Provost-Marshal of the District, Capt. Wm. James, was directed by the Provost-Marshal General, through Lieut.-Col. James Oakes, A. A. P. M. G. of Illinois, to investigate the same and report in full, for transmission to the proper department in Washington.

On the part of the Complainants at the Court of Investigation, held pursuant to this order, were introduced G. D, Beebe, A. E. Small, and N. F. Cook, said to be Homœopathic Doctors. Thos. B. Byrne, C. H. Hudson, W. H. Boyle, L. M. Bennett, Thomas Boyle, probably lay members of the same quasi-medical sect.

Geo. D. Beebe being duly sworn, deposed as follows, viz.:

On the 27th day of August, 1864, I gave to Mr. L. M. Bennett a certificate of disability in support of a claim for exemption from draft, and accompanied him to the Board of Enrollment where I introduced him to J. W. Freer, the Enrolling Surgeon, and handed him the certificate, which was accompanied by my affidavit, and set forth the nature of Mr. Bennett's disability. Dr. Freer said to me that he would not receive any certificate signed by a Homœopathic Physician; that they were a set of pretenders and quacks, and that such certificates

did not amount to anything. I then called Dr. Freer's attention to the rank I had previously held in the Army, as being in some measure an indication of my professional attainments, and that I could prove to him that I had been educated in the best Schools in the country. His reply was given in a sneering, taunting manner that, "Yes, I know how you got into the Army; you got in there by subterfuge. I found you once sneaking into the Rush Medical College and then kicked you out of the building," etc., etc., statements entirely at variance with the facts in every case, and apparently made for the purpose of insulting me. I then told Dr. Freer that I was not there to defend my character, or to resent insults, that I came to consult him as a government officer. I then asked him if the certificate I had presented was in due form, he took the paper, read it over, and said it was. I then asked him if the facts certified to were sufficient to exempt Mr. Bennett, provided the certificate was satisfactorily signed. He said he supposed they were. I then told him that the question of Homœopathic Physicians being competent to give certificates under oath was by his course, assuming such proportions that we should be compelled to refer it for decision to the authorities at Washington. I cited his attention to the fact that nearly all of these physicians whose certificates he rejected were legal graduates of the very best Schools in the country, such as the *University* and *Jefferson* Schools of Philadelphia, and others equally competent to confer the degrees, and if their certificates were sworn to I did not believe the authorities at Washington would discriminate against them. Mr. Bennett then, in my hearing, asked Dr. Freer for a personal examination to determine the question of disability, and Dr. Freer did, in my hearing, refuse to examine him. Mr. Bennett then asked, What am I to do? Dr. F. said, When you can bring the certificate of a regular physician I will attend to you. (Signed,)

Chicago, Oct. 26th, 1864. G. D. BEEBE, M. D.

It is noticeable that, subjoined to this affidavit, Mr. Beebe notes down references to several gentlemen of the city, as vouchers for his professional standing and reputation. As this statement is not sworn to, and as none of the referees are suspected of even a Homœopathic acquaintance with medicine, either as a science or art, we do not find it necessary, or does justice to the Complainants in any wise demand its reproduction in this place.

On *Cross-Examination* Mr. Beebe replied as follows:

In regard to his receiving certificates, I know he said to Bennett that when he could procure the certificate of a regular physician he would then attend to him. In regard to the allegation of making his position subservient to his private interests I know nothing personal, except the certificate of Thomas Boyle, which I herewith submit.

[This affidavit, for convenience, is here introduced.—*Rep.*]

I hereby certify that on or about the 16th day of August, 1864, Wm. H. Boyle and myself applied to the Enrolling Surgeon of this District (Dr. J. W. Freer,) for exemption from draft on the ground of physical disability. The said Wm. H. Boyle, claiming exemption on the disease of the heart, offered in support of this claim, to furnish the certificate of his physicians, Drs. Small and Hale. Dr. J. W. Freer said to my brother, the said Wm. H. Boyle, that he would not take the certificate of any Homœopathic Physician, that such physicians were mountebanks and not capable of treating the sick, but if he would take a prescription,

such as he the said Freer would give him, for a few days, he could then tell whether disease of the heart existed sufficient to exempt him. The said Freer did then give my brother medicine with directions for taking the same, and requested him to report to him again in a few days. I further certify that my brother, the said Wm. H. Boyle, did not ask Dr. Freer for medical advice. Dr. Freer also stated to me personally that he would not take the certificate of any Homœopathic Physician. I also certify that my brother, the said Wm. H. Boyle, was called to New York on business two days after receiving the medicine from Dr. Freer, and has not yet returned. (Signed,)

Chicago, Oct. 25th, 1864. THOMAS BOYLE.

Sworn to before Frode Heegaard, Notary Public.

Beebe's testimony on *Cross-Exam.* continued.

Ques.—What Medical College were you educated in?

Ans.—In the Albany Medical College and the Homœopath Medical College of Philadelphia.

Ques.—Of what School is the Albany?

Ans.—Allopathic.

Ques.—Did they call it an Allopathic School?

Ans.—They called it the Albany Medical College. I will not swear that they did not call it an Allopathic School. There are various titles given to such Schools by the people, such as thunder-and-lightning schools. These are merely slang phrases.

Ques.—Is or is not it a slang phrase to call it Allopathic?

Ans.—I think not. They are sometimes called the Regular School. I call them Allopathic. I do not know that they regard the phrase Allopathic, as applied to their system, a slang phrase.

Ques.—Do you know who were the authors of the application to them of the phrase "Allopathic"?

Ans.—The Greeks.

Ques.—What is the reputation of the Albany School?

Ans.—One of the best in the country of that class.

Mr. Beebe then stated, in reply to an interrogatory, that he at one time applied to the Ill. State Med. Examining Board for examination as Surgeon, but the request was declined on the ground of being a Homœopathist. [See Dr. Johnson's evidence.]

Ques.—Did you afterwards apply to the Board at Washington?

Ans.—I did through Dr. Dyer to the Sec. of War.

Ques.—As a Homœopathic or Allopathic Physician?

Ans.—I don't know whether those terms were used or not. They were not in the application. I think Dr. Dyer told me that he informed the Secretary that I was a Homœopathist, and urged my appointment on that ground.

Ques.—Were you examined?

Ans.—I was.

Ques.—In the theory and practice of medicine, among other things?

Ans.—I was.

Ques.—According to what system, as to the theory and practice of medicine?

Ans.—The Allopathic School—the only School with which the Board was supposed to be acquainted.

Ques.—Were you requested to write a thesis?

Ans.—I was.

Ques.—What was the subject?

Ans.—Acute Rheumatism.

Ques.—As to the treatment of that disease in your thesis, did you conform to the Homœopathic or Allopathic treatment?

Ans.—To the Allopathic—though I recommended a remedy used in both Schools.

Ques.—Did you pass an examination?

Ans.—I received the Surgeon-General's certificate that I was recommended by the Board.

Ques.—Did the Board, to your knowledge, know you were a Homœopath?

Ans.—I don't know. As they had not the appointing power I did not think it necessary to tell them.

Ques.—Do you believe they would have given you a certificate if you had told them?

Ans.—I have no reason to think they would not.

Ques.—Your experience with the Illinois Board is no reason, is it?

Ans.—Not at all.

* * * * * * * * *

Ques.—Do you know a man by the name of Patterson, in this city, and if so, were you called upon to treat him for an injured leg?

Ans.—I know Mr. P., and was so called upon.

Ques.—What was the difficulty with his leg?

Ans.—A comminuted fracture of the patella.

Ques.—How, and to what extent was it fractured?

Ans.—I discovered six fragments to the patella, giving mobility and crepitus.

Ques.—What are the symptoms of fractured patella?

Ans.—Those I gave above; the mobility of the fragments, and crepitus.

Ques.—Was there any separation of these fragments, and in what direction?

Ans.—Owing to the direction of the force which produced the fracture there was but very little separation.

Ques.—What forces are always brought to bear in the fracture of a patella, (unless that fracture be longitudinal,) causing a separation of fragments, and to what extent?

Ans.—There are no forces always operating to separate the fragments. Usually fracture of the patella takes place while the knee is flexed, in which case the quadriceps extensor femoris, by its contraction, tends to separate the fragments to a considerable extent. In this case the fracture took place while the limb was fully extended. The patient was standing on a box placed on a chair, the man reaching up to the top of a window, the box toppled off from the chair, and as the man fell perpendicularly, his knee struck the sharp corner of the box or the sharp corner of the box struck the patella, a little below the middle, causing the fracture. The contractile force of the quadriceps extensor was not sufficient in this case to separate the fibres of the ligamentum patella, within which the patella is lodged.

Ques.—Are there any forces which would cause a depression or descent of the lower fragments?

Ans.—Only the slight contraction of the ligamentum patella.

Ques.—Of what tissue is that composed?

Ans.—Fibrous.

Ques.—Which variety?

Ans.—Yellow fibrous.

Ques.—Is the quadriceps a powerful muscular mass?

Ans.—It is.

Ques.—Have you not shown that there were two powerful forces acting in opposite directions on these fragments?

Ans.—I have shown that there was not, from the fact that the muscle was in a state of contraction, the limb being fully extended at the time of the accident.

Ques.—Do not the muscular fibres continue to contract, notwithstanding the

points of muscular attachment to bone may have been separated, until they attain an unnatural degree of contraction?

Ans.—That is a question I could not answer yes or no.

Ques.—Did you change the dressing of Patterson's limb, if so, how long after the fracture, and was your second dressing consistent with your theory of the accident, etc. ?

Ans.—That dressing was not changed until some time after, when the man was walking about on crutches, say three or four weeks.

Ques.—Did you not place the limb on a double inclined plane, with the limb flexed ?

Ans.—I did not. The patient complained at my third or fourth visit that there were muscular jerkings of the limb, and asked if there was not some means by which I could steady the limb. He was afraid he would displace the bandage, I thereupon laid the limb in a Day's fracture splint, still keeping the knee fully extended.

Ques —How many cases of fractured patella does Frank Hamilton report as having united by bone ?

Ans.—I have not consulted him recently enough to remember.

Ques.—Did Patterson's case unite by bony union ?

Ans.—I think it did, bony union by means of cartilage.

Ques.—Are you acquainted with the public sentiment in regard to Dr. Freer's discharge of his duties as Enrolling Surgeon, exclusive of those who sympathize with the Homœopathic system ?

Ans.—Those who do not sympathize with the Homœopathic system are principally foreigners, and I do not know their sentiments.

Ques.—How many, exclusive of Physicians, have you heard speak of him as Enrolling Surgeon ?

Ans.—I think fifty persons.

Ques.—Who were they ?

Ans.—I can't tell the names, they are among the prominent and most influential people in the city.

Ques.—Can't you name any of them, and do you know whether they had any personal knowledge of the manner in which he discharged his duties ?

Ans.—One, I think, was Mr. T. P. Byrne, Mr. James L. Collins, Mr. L. M. Bennett, Rev. Dr. Clark. I have talked with many others, but can't think now. Byrne said that Dr. Freer said a man must be insane or a fool who would employ such men as Dr. Small and Dr. Beebe.

Ques.—How many of these men applied for certificates of disability that you have named ?

Ans.—I guess all of them applied here at the office.

Ques.—Were any of them exempted ?

Ans.—Mr. Collins—I don't know about the others.

Ques.—Were you examined here for exemption, if yea, how were you treated ?

Ans.—I was examined here. The fact was that Dr. Freer did not know me. I was treated very gentlemanly.

Ques.—Do you know how long he has been a teacher in Rush Medical College?

Ans.—I do not, but I have heard that he has recently left the trade of a blacksmith.

Ques.—Who told you so ?

Ans.—I don't know.

Ques.—Will you tax your recollection to the utmost ?

Ans.—I can't tell.

Ques.—How long have you been in this city, and has he not been a teacher ever since you came here ?

Ans.—I have lived here nearly seven years. I do not know whether he was a teacher when I came here or not.

Ques.—Did you not, the first winter you came here, see Dr. Freer in the discharge of his duties as teacher in that College ?

Ans. – I think not.

Ques.—Did you not enter the dissecting rooms of that College the first winter you came here, and commence dissecting, or was it at a later date?

Ans.—I think the second winter that I was here I accompanied a student of mine and made arrangements with Dr. Hollister, my student purchasing a subject from him and paying him for the privilege of dissecting it in Rush College. I accompanied the student to the College and taught him there. I don't know whether I saw Dr. Freer there.

Ques.—Do the two Schools recognize each other by consultation, graduating, or otherwise?

Ans.—They do. At the time of my pursuing a course of study in the Albany College I told the Dean of the Faculty that I was a student in a Homœopathic office, and asked him if that would make any difference in their conferring the degree of that College upon me. He replied, that need make no difference, or words to that effect. Numerous other instances, both in that and other Schools, have confirmed me in the belief that they are not governed by the individual preferences of students. As regards consultations, I am not infrequently called in consultation by Allopathic Practitioners. One recent instance, was that of a physician about 35 miles out on the North Western Road. He telegraphed for Dr. Beebe or Dr. Brainard to meet him to make an amputation. He was an Allopathic Practitioner of Barrington, Illinois. Dr. Brainard is an Allopathic Practitioner. I met him and performed the operation, and subsequently consulted him in reference to the case, by letter. I might say, in a general way, that a large number of the Practitioners of both Schools recognize each other as members in common of a scientific profession.

Ques.—Is it, or is it not, a common occurrence, for Homœopathic Practitioners to graduate at Allopathic Medical Colleges?

Ans.—It is. I am personally knowing to the fact that numbers of those who graduated at Rush Medical College in this city, are Homœopathic students, and graduate with the design of practising Homœopathic medicine. The same is true of the Bellevue Medical Hospital of New York city, and numerous other Schools that I might mention. The class at the University at Ann Arbor, Michigan, is sometimes nearly half made up of Homœopathic students.

Ques.—About the inclined plane spoken of in the examination, in regard to one Patterson, state whether the limb was placed in inclined planes, and how it came about?

Ans.—I stated that the leg was placed in one of Day's fracture splints, and fully extended, but at a subsequent visit I found that the patient had, without my knowledge, slightly flexed the knee. I again extended the limb and left it extended. The leg was never in a double inclined plane by my direction or consent.

Ques.—Who was the Allopathic Physician at Barrington who telegraphed to you and Dr. Brainard, and with whom you consulted by letter?

Ans.—I can not call his name to mind at this moment.

Ques.—Have you conferred with Dr. Brainard to ascertain whether he would not consult with you, and if so, what did he say?

Ans.—I did confer with him on that subject, asking him if he would meet me in strictly surgical cases. He said that so far as he himself was concerned, he should have no objection, but he belonged to a School where such course might make trouble with his neighbors. I did, however, with his consent, take a patient to his office, and there consult him in reference to it. The Doctor examined the case, expressed his opinion as to the disease and mode of treatment.

Ques.—Do you know that the Faculty of Rush Medical College are aware that any students are now attending, or have heretofore attended, the College with the intention of practising Homœopathically?

Ans.—I do not know, but have presumptive evidence.

Ques.—What presumptive evidence?

Ans.—The well-known preferences of some students, and their freedom in expressing those preferences.

Ques.—What are their names?

Ans.—D. A. Colton, I think is one. I believe I will not give any more names.

Ques.—Is Mr. Colton a member of the present class, if not, what class?

Ans.—No, sir. I could not say of what class.

Ques.—Please give the names of those fifty persons who have expressed the opinion you have stated in regard to Dr. Freer as Enrolling Surgeon; how many of them were applicants for certificates of disability; what were their preferences as to the two Schools of medicine, and in your conversations with them, who introduced the subject?

Ans.—T. P. Byrn. His preferences are for Homœopathy, and he was an applicant for discharge. I am unable to say who mentioned the subject as to Dr. Freer. James L. Collins was another. He employs both systems in his family. He was an applicant for discharge. He introduced the subject of Dr. Freer to me. L. M. Bennett, the witness who was before the Board; he introduced the subject to me. He was an applicant for discharge. W. H. White is a Homœopathist, not an applicant for discharge. E. Rawson was another, is a Homœopathist, a physician, I think not an applicant for discharge. There are a good many other Homœopathic physicians included, in the city. I am not aware whether they were applicants for discharge or not.

A. E. Small, another of the complainants, being duly sworn, deposed and said, that he had no personal acquaintance with Dr. Freer and had no issue with him; that he signed the letter containing the charges as one of a Committee of a Homœopathic Society, supposing that the charges could be sustained. Would not have signed them if he had been aware that the word "brutal" was in the paper. Supposed that he used insulting language to those who differed with him in sentiment only from the statement of others. Relied upon the testimony of Wm. H. Boyle to prove that Dr. Freer made his position subservient to his private interest. Know nothing personally of his deficiency in education or good breeding. This witness further replies as follows:

Ques.—How do you regard Hahnemann as a medical philosopher?

Ans.—I regard him as a very learned, devoted lover of truth, and one of the most scientific physicians of his time.

Ques.—You have read his Organon; do you concur in his treatment of Syphilitic diseases as laid down in the note to the 246th Sec. of the Organon at the close of the section?

Ans.—Well, I have never treated them in that way, and therefore am not prepared to say whether I concur or not.

Note.—"In pure syphilitic diseases I have generally found a single dose of mercury (X°) sufficient; yet where the least complication with psora was perceptible, sometimes two or three such doses were necessary, given in intervals of six or eight days.

"In those cases wherein a particular remedy is strongly indicated, but the patient is very weak and irritable, once smelling a globule of the size of a mustard seed, moistened with the medicine, is safer and more serviceable than

hen it is taken in substance, even in the minutest dose of the higher dilutions. In the process of smelling, the patient should hold the vial containing the globule under one nostril, when one momentary inhalation of the air in the vial is to be made; and if the dose is intended to be stronger, the same operation may be repeated with the other nostril. The operation of the medicine thus administered continues as long as when it is taken in substance, and therefore the smelling must not be repeated at shorter intervals than when taken in the latter mode."

Ques.—How does the foot note under Section 288 strike you, as the vagaries of a visionary or the result of sound investigation by a great medical philosopher?

Note.—"Homœopathic remedies operate with the most certainty and energy by smelling or inhaling the medicinal aura constantly emenating from a saccharine globule that has been impregnated with the higher dilution of a medicine, and in a dry state enclosed in a small vial. One globule, (of which 10, 20 to 100 weigh a grain,) moistened with the 30th dilution and then dried, provided it be preserved from heat and light of the sun, retains its virtues undiminished, at least for eighteen or twenty years, (so far as my experience extends,) although the vial that contained it had during that time been opened a thousand times. Should the nostrils be closed by coryza or polypus, the patient may inhale, through his mouth, holding the mouth of the vial between his lips. It may be applied to the nostrils of small children while they are asleep, with the certainty of success. During these inhalations the medicinal aura comes in contact with the nerves, which are spread over the parietes of the ample cavities, through which it freely passes, and thus influences the vital power in the mildest, yet most powerful and beneficial manner. All that is curable by Homœopathy may with the most certainty and safety be cured by this mode of receiving the medicine. Of late I have become convinced, (which I would not have previously believed,) that smelling imparts medicinal influence as energetic and long-continued as when the medicine is taken in substance by the mouth, and at the same time that its operation is thus more gentle than when administered by the latter mode. It is therefore requisite that the intervals for repeating the smelling should not be shorter than those prescribed for taking the medicine in a more substantial form."

Ans.—It strikes me just in this way: If he was under oath when he wrote it, he was a man of very close observation. It does not read to me as the vagaries of a visionary. I do not see why it should not be the result of sound investigation.

Ques.—Are you acquainted with the Rush Medical College by reputation?

Ans.—I am.

Ques.—Is it an old School of many years standing?

Ans.—I believe it is the oldest College in the West.

Ques.—What relation does Dr. Freer sustain to the College?

Ans.—He is reputed to be a Professor.

Ques.—Of many years standing?

Ans.—I believe he has, ever since I have lived in this city.

Ques.—Do you not know what his standing is as a Physician?

Ans.—I do not.

Ques.—Did you not live near neighbor to him for several years?

Ans.—I lived within one block of him for two years, I think.

Ques.—Do you not know his standing as a Physician and teacher in this city?

Ans.—I cannot answer from any positive knowledge. I believe he stands very well as a teacher; I have no doubt of it, from notoriety. Well, I think, with those who prefer that kind of practice, I understand that he stands well.

Ques.—Did you ever know a Physician who called himself an "Allopathic Physician?"

Ans.—Yes, sir.
Ques.—Who was he?
Ans.—I don't recollect who.
Ques.—Was he a Physician of recognized high-standing?
Ans.—So far as I know, I cannot say whether he was or not.
Ques.—Do you not know that they regard it as an insult to be termed Allopathic Physicians?
Ans.—I was not aware of it.

N. F. Cook, another complainant, being duly sworn, deposed that he knew nothing of his own knowledge of the charges made against Dr. Freer in the letter to General Fry signed by him. He signed it as one of a Committee.

Cross Examination of Dr. N. F. Cook. *Ques.*—Doctor, do you remember a conversation with Dr. Hurlbut a few months since in this city, at the dining saloon of Ambrose & Jackson, in which you stated to him your motives in commencing your practice in this city as a Homœopathic physician? If so, state the conversation.
Ans.—I do not remember any conversation with him on the subject.
Ques.—Have you ever had a conversation with Dr. Hurlbut respecting your motives in commencing to practice in this city as a Homœopathist?
Ans.—I never have.

Thomas P. Byrne and *Charles H. Hudson*, being severally introduced and sworn, deposed, in effect, that while being examined for exemption from the draft, Dr. Freer ridiculed Homœopathic practitioners and their creed. Made no charges of unfairness or bad treatment in any respect or any attempt on his part to make his position subserve his private interest.

William H. Boyle, being duly sworn, says: I am 24 years of age, reside in Chicago; am wholesale dealer in fancy goods at 49 Lake street. I have seen Dr. Freer, enrolling Surgeon, once; am not personally acquainted with him. I saw him, say between the 15th and 19th of last August, at his office, corner of Clark and Lake streets. I had been troubled with an affection of the heart for about fifteen months previously. I went there to get examined. I went into his private office, and was there perhaps fifteen minutes. After the examination was over, we came into his front office, and I asked him whether he thought my disease was of such a nature to exempt me from the draft. He said he thought it was caused by indigestion. I told him that could not be the case, as I had been under medical treatment for the past year. I also told him that I had been very moderate in my eating for a long time past, as I was distressed after eating. I also told him that I could bring him a certificate from Drs. Small and Hale, under whose treatment I had been. He answered that would not do, as they were nothing but pettifoggers. I told him I was very sorry to hear that, as they had been our family physicians for a long time. He then wrote me a prescription, which I have in my pocket; I have never used it. I supposed he was giving it to me gratis. He said it would be two dollars, which I paid. I did not use the prescription, as I was under treatment by Drs. Small and Hale. There was nothing further took place. Two days after I left for New York, and I have not taken any medicine since. When he gave me the prescription he gave me directions for taking it. I do not know what was his object. There was no further conversation took place. I did not ask him for

the prescription. I believe that when I went into Dr. Freer's office my first words were, "I believe that I have been troubled with an affection of the heart and wish to be examined." After he got through with the examination, I asked him if he thought my disease would exempt me from the draft. When I first went in I went with another man, and he asked for Dr. Freer, who was there. I don't know what conversation took place between Dr. Freer and my friend. After I got through with my examination, I asked him if my disease would exempt me. I said nothing in regard to my wish for exemption until after he got through with the examination.

Cross Examination. *Ques.*—Who went with you to Dr. Freer's?

Ans.—A fellow by the name of Edwin Cuyler.

Ques.—How did he happen to go with you?

Ans.—He was going to be examined for some disease and called at the store.

Ques.—Had you a conversation with Drs. Small and Hale, or either, in reference to your visit to Dr. Freer's private office before you went?

Ans.—I saw Dr. Hale previous to my visit.

Ques.—State all that took place between you and Dr. Hale in reference to your proposed visit and what he advised

Ans.—I asked Dr. Hale whether he thought I had better go to Dr. Freer and be examined. He said he would by all means. That was all he said.

Ques.—Mr. Boyle, will you not charge your memory and see if you are not mistaken as to the time when you asked if your disease would exempt you. Was it not after the prescription?

Ans.—No; it was previous.

Ques.—Do you not know that he made the prescription in the private office?

Ans.—No; he wrote it after I came out.

Ques.—You have sworn that it was a fellow by the name of Edmund Cuyler who went with you to Dr. Freer's, and your brother Thomas Boyle, has filed an affidavit with the Board that he went with you. Which of you has told an untruth?

Ans.—Well, now, I will tell you. Mr. Cuyler came to go with me, I know. I think I went there with ——. I could not say whether I was there once or twice. I have got memorandums—I tell you—Mr. Cuyler, if I could see him. My memory was not good at the time. I had been drinking considerably on that day and previously, and was going to New York, and every thing was in confusion. I admit that my ideas were mixed up.

Ques.—Are you willing to swear again that the prescription was given in the front room?

Ans.—Yes, sir.

Ques.—Are you willing, in consideration of the state of your mind at the time, to swear that you said anything about exemption before you paid the bill?

Ans.—Well, I think it probable that I did, as my object was to get exempted. Let me see, now, I have not thought of the thing since the time. Dr. Small came to my store and wished me to be examined. I think it was before I paid the bill that I asked him. Drs. Small and Hale are Homœopathic physicians.

Dr. Freer, the respondent, here admits, for the purpose of saving time, that he has the strongest contempt for the Homœopathic fraternity that words can express, and waives all further proof thereof, and the fact that he entertains such opinions is well-known.

L. M. Bennett says: I called upon Dr. Freer personally in this room in August, perhaps the 27th. Asked an examination on a claim of disability. I came alone; made my statement to the Doctor; said I had a certificate from my physician. He asked me then, I think, who my physician was. I told him Dr. Beebe. I can't give the words the Doctor gave me; the amount of it was that he refused to receive the certificate of Dr. Beebe. I asked the Doctor what I was to do; that I was nearly a stranger in town; had fallen in Dr. B.'s hands, and he had been my physician. He said I must get a certificate from a regular Physician. I asked him what I was to understand by a regular Physician. He replied again, "any regular Physician." I believe I asked him then to suggest some name. He said he did not wish to make any distinction between Physicians. I told him then I was acquainted with young Dr. Harlbut, and either he or some one sitting beside him suggested Dr. Brainard. I think that was about all that occured then. On this occasion I had no certificate. The next and last time I came, Dr. Beebe came with me, and I think had a certificate of my disability, which he handed to Dr. Freer. I could not repeat the conversation that took place between Dr. B. and Dr. F. I can only say that there were some high words between them; I would not pretend to give the words. I do not know any thing different that occurred than Dr. Beebe's statement. When we came in, Dr. Beebe offered the certificate; asked Dr. F. if it was in proper form. Dr. F., after looking at it, said he presumed it was. Dr. B. asked him, will you receive it? I think that was the form. Dr. F. said he would not. Then this other conversation occurred, which I won't pretend to give. I would not think of giving the language further than I have stated. I have heard Dr. Beebe's statement; on hearing, it sounds fresh to my memory, and I believe it to be substantialiy correct. Not being interested, I did not pay so much attention to it as Dr. Beebe did. After Dr. Beebe went out I remained. I told Dr. F. I did not think I should suffer from the differences between Physicians, and asked him what I should do. He said he had no time to examine such cases, and he, or some one sitting by, suggested Dr. Brainard. I did not call upon Dr. Brainard. I afterward called on Dr. Freer at his office, and he referred me to Dr. Hunt. I do not know any thing further than I have already stated. Dr. Freer, in the first conversation between us, called Dr. Beebe a quack.

Cross Examination.—Dr. Freer, in telling me to get the certificate of a regular Physician, may have said get the certificate of one in good standing. In the interview between Dr. Freer and Dr. Beebe they seemed to be a little excited.

Ques.—What did Dr. Beebe term your disease?

Ans.—My disease was located in one of my testicles, and he described it by a medical term which I do not remember. The certificate now shown me is the one Dr. Beebe gave me. I see by reference to it that the diseases as described in the certificate are Varicocele of the left testicle and sciatic rheumatism. Dr. Freer did not charge me anything; has said nothing about payment. Dr. Hunt has presented no bill. When I came to Dr. Freer, I told him I thought I had a disease of the kidneys. I think I described some of my feelings, but do not think I mentioned the diseases referred to in the certificate. I think, though, I did mention the sciatic rheumatism. When I told the Dr. my impressions in regard to my disease was the time he told me to be examined by a regular Physician. There was quite a number of persons in the front office. The Doctor said he had not time to examine such cases as mine.

Re-direct.—I heard Dr. F. say in his conversation with Dr. B., "I know how you got into the army; you got in by stealth." I can't recollect whether Dr. F. said he would not receive the certificate of any Homœopathic physician. I did not think Dr. Beebe manifested ill feeling at the time. I think that after a little conversation between them, Dr. F. manifested some feeling; it is not for me to say how much. Dr. Freer made the statement that I have mentioned about Dr. B. stealing into the army.

Surgeon Freer, in his defence, introduced the testimony of David Dodge, M. D., J. Adams Allen, M. D., H. A. Johnson, M. D., Daniel Brainard, M. D., V. L. Hurlbut, M. D., Wm. C. Hunt, M. D., I. P. Lynn, M. D., Messrs. Josiah Patterson, Thos. Boyle, Hon. S. A. Goodwin, and I. L. Milliken. This testimony here follows, omitting merely a few repetitions drawn out by cross-examination, and the uniform statements of the medical gentlemen as to the well-known high professional reputation, education, abilities and courteous bearing of Dr. Freer.

Dr. David Dodge, being duly sworn, deposed as follows.

TESTIMONY INTRODUCED ON THE PART OF THE RESPONDENT.

Ques.—Do you know a man by the name of Patterson living in this city, who was supposed to be suffering with a fractured patella? If yea, who had treated him before you saw the case? Did you examine the knee? If so, how long after the supposed injury; and had there been a fracture of the patella and to what extent?

Ans.—I know a man by the name of Patterson in this city. He was injured and the family sent for me, but not finding me at home, sent for Drs. Beebe and Fraser. I went to see the case on my return, and in a few minutes Drs. Beebe and Fraser came in. I wes examining the limb when they came in. They, on coming in, requested me to cease handling the limb, and the family told me then that, being tired of waiting for me, they had sent for Drs. B. and F. I surrendered the case to them. I examined the knee before they came in. The family remarked to me, that, as the Doctor had been to the trouble of going after apparatus, perhaps he had better treat it. I did not find any appearances of fractured patella, other than swelling. I told him I could not see it.

Ques.—Suppose the patella were fractured into six pieces, would it be possible that you should not have discovered it in your examination?

Ans.—I think I could have detected it very readily.

Ques.—Did you see Patterson's limb after the first dressing? If so, how soon after, and how frequently was a change in the dressing, and how long after, and how?

Ans.—I think three days after the first dressing, perhaps four. I called to see a lady in the house, and passed through the room. I did not notice at that time whether the dressing had been changed. The next day Professor Allen called to see the lady patient, and I again passed through the room, and looked at the limb. We saw a double inclined plane, Day's splint, standing by the bed. We asked Mr. Patterson what he had been doing with that. He said the Doctor brought it up for him to put his leg on. There was no splint of any kind on the leg at the time; it was secured by india-rubber bands. I saw the leg again six or eight days after this time. I asked Mr. Patterson if he could bend his knee. He said he could, and did do it in my presence. This was ten or eleven days after the accident.

Ques.—How long did you examine the knee the first time?

Ans.—Perhas one-and-a-half or two minutes.

Ques.—Are you sure that it was not fractured?

Ans.—I was quite sure at the time and afterwards was positive. I knew it was not, because I could not find any separation into fractures with my fingers.

That was the principal reason. You can always feel the fragments of a patella, there is so little covering, the tissues are so thin.

Ques.—Suppose the fracture or separation was no more than the tenth of an inch, could you feel it?

Ans.—I can conceive of no such case. They would separate from one to two inches.

Ques.—Suppose the patella were broken while the leg was perfectly straight and it was not bent afterwards, would the patella separate then?

Ans.—Such a thing is hardly possible, unless it were done by a bullet, and then the muscles would continue to contract and the fragments separate.

Ques.—Did you ever know a case where the patella was broken while the leg was straight?

Ans.—No, sir. I have seen but few cases in my life, and those occurred while the leg was partially bent.

Ques.—How many have you seen?

Ans.—I have seen four or five—possibly twice that number; but I cannot remember so many.

Ques.—How do you know, then, that the patella would separate if fractured while the leg was straight?

Ans.—Because of its muscular attachments; the upper fracture would separate from the lower by the contraction of the muscle.

Ques.—Is it wholly impossible that the ligamentum patella should resist the contraction of the quadriceps extensor when the leg was perfectly straight?

Ans.—I think it is.

Ques.—Would not the periosteum over the patella be sufficient to hold the fractured sections of the patella from separation?

Ans.—No more than a piece of wet paper.

Dr. J. Adams Allen, being sworn, deposed:

I reside in Chicago, where I have resided, I think, about five years. I am a teacher in Rush Medical College; Principles and Practice of Medicine. I have taught there ever since my residence in this city. I have been connected with two other medical colleges most of the time since 1848, in the old Indiana Medical College and the University of Michigan.

Ques.—Please give me as concise a definition of the word Physician, as you would define the word to your class, say at graduation.

Ans.—Well, the term Physician is an old one, and, as its origin suggests, it is intended to include those persons who have studied the laws of nature. As the term is ordinarily employed and is used by ordinary physicians, it is applied to those persons who have studied the laws of nature with reference to health and disease. Technically we call such man a doctor, because he is learned in the laws of nature and health and disease.

Ques.—There is a class of persons known as Homœopathists. Are they, to your knowledge, recognized by Physicians in this country as legitimate Physicians, and are they recognized as such? If so, how and to what extent?

Ans.—There is such a class, and they are not recognized as Physicians by Physicians.

Ques.—Is it customary for Physicians to qualify their identity by any adjunct, such as Allopathy, Eclectic, or other such nomenclature?

Ans.—It is not.

Ques.—How is such nomenclature as a handle to a Physician's title regarded by the Faculty?

Ans.—As an evidence of charlatanry or quackery.

Ques.—Are you acquainted with Dr. Freer? How long have you known him? What is his standing as a teacher, Physician, Surgeon, and as a man, in this community? State your means of knowledge.

Ans.—I am acquainted with Dr. Freer. His standing is among the most eminent in each respect. I have been in the habit of daily intercourse with him as a colleague in the College, in medical consultations, in daily intercourse, and know his general reputation.

Ques.—Did you see a man by the name of Patterson in this city some months since, said to have had a fractured patella? If you did, did you examine his knee; and if you examined it, did you find any evidences of fractured patella?

Ans.—I saw such a man and examined his knee, and found that there was no fracture of the patella.

Ques.—How long a time would it require for the reunion of a patella fractured into six pieces, say in a patient of 56 years of age?

Ans.—Well, I don't know as I can say. It would depend upon how perfect the apposition of the parts was secured. If the apposition was perfect it might re-unite in six or eight weeks. It would depend on many circumstances. It is difficult to limit the time.

Ques.—How would you regard the treatment of such a fracture; the placing the limb in a double inclined plane, the limb one-third flexed?

Ans.—I should regard that as aggravating the injury, increasing the displacement, the deformity.

Ques.—You are one of the old school are you not?

Ans.—I am a Physician. There is but one school.

Ques.—Are you one of those called an Allopathic Physician?

Ans.—I am what is called such by Homœopathists, not by intelligent people. The term is a nick-name. The word Allopath, as applied to Doctors, is what shyster is to lawyers.

Ques.—Do you consider it impossible that a Homœopathic doctor should be a learned man?

Ans.—It is impossible for a Homœopathic physician to be an educated man, or an educated man to be a Homœopathic physician. To say "Homœopathic physician" is as great a solecism as to say "black white bird." I ought, perhaps, to use the word "honestly," as an educated man might be guilty of a violation of a moral law.

Ques.—How are you in the habit of designating Homœopathic physicians?

Ans.—As Homœopathic doctors, or as quacks; or, as we say, clap doctors, Indian doctors, horse doctors, cancer doctors, root doctors.

Ques.—Is there not any one of the Homœopathic doctors here for whom you have some esteem and respect?

Ans.—Not as a Doctor; as a Physician.

Ques.—Are there not some of them who have been educated in some of your Colleges?

Ans.—I know of no such instances. It may be, just as there are backsliders from the churches. The children of clergymen sometimes do things their fathers are astonished at.

Ques.—Is it quite impossible that a fractured patella should heal in less than six weeks?

Ans.—In the case of a man 56 years of age, I should think not. With God all things are possible. I think He did not interfere in this case.

Ques.—Did you ever see a case where the parts were in perfect apposition?

Ans.—I don't know that I ever did. It is very difficult to get them in such a position and keep them so, without danger to the parts by the pressure. They are never found in apposition immediately after the injury; that is an absurdity. It is impossible. It was never seen on the face of the earth.

Ques.—If the patella were broken while the leg was in a straight position, would not the ligamentous covering be sufficient to keep the parts together?

Ans.—No, sir.

Ques.—Do you not determine whether the patella is broken by the crepitus?

Ans.—I should say not. That is the difficulty in such cases to get the parts

together so that there shall be crepitus. It is an absurdity. It is drawn up by the strongest muscle in the body.

Ques.—How does Frank Hamilton stand as an authority on that subject?

Ans.—Good; one of the best on the subject of fractures generally. I have not examined him on that subject. I can see readily in a longitudinal fracture how there can be crepitus.

Dr. Hosmer A. Johnson deposed:

I am a Physician, Surgeon and Teacher in the Chicago Medical College. I have resided in Chicago fourteen years past. I occupy the chair of General Pathology and Public Hygiene. I was a teacher in the Rush Medical College, I think, for five years.

Ques.—Please give the definition of the word Physician as you would define it to your class.

Ans.—In its medical sense it is applied to those persons who devote themselves to the structure and action of the human body in a state of health and disease, and to the treatment of diseases by the honest use of all those modes and means that experience and observation has shown to be most useful.

Ques.—Is there any association by Physicians with those classes of professed doctors known as Homœopathic doctors, Eclectic physicians, and other similar classes, and is any or either of them in any manner recognized as Physicians by men of your profession?

Ans.—There is no such association. They are not recognized as Physicians.

Ques.—How long have you known Dr. Freer, and what is his standing as a Teacher, Physician and Surgeon, and what was his position when you first became acquainted with him?

Ans.—I have known him fourteen years, a little more perhaps. He was a Physician and Surgeon, and teacher of Practical Anatomy and Surgery in Rush Medical College when I first knew him. His standing is among the first in his profession.

Ques.—You heard Dr. Beebe testify that he was examined by the Medical Board at Washington, without disclosing that he was a Homœopathic practitioner; and that in writing his thesis, he gave the treatment of the Physician, instead of that of the Homœpath. (I state the substance of his testimony, and not the language.) Would you regard that course on his part as professionally honorable, or would you consider that he obtained his certificate by subterfuge?

Ans.—I did not regard it as honorable, but perfectly in keeping with the action of the Homœopaths with reference to the State Boards. I should consider it a subterfuge. I should consider a man, who would do that, disqualified for a position in the army, under the instructions of the Secretary of War, which requires that a man should have a good moral character.

Ques.—Do you know Dr. Beebe?

Ans.—I do.

Ques.—Don't you think his character is good?

Ans.—The only knowledge I have of his moral character, is from the efforts he made to obtain an examination by the Medical Board of this State, and his testimony, which I heard in this room. I judge from those efforts and his testimony that he was not a man of good moral character.

Ques.—Did you hear Dr. Allen's testimony as to Homœopathic physicians generally?

Ans.—I did.

Ques.—Do you agree with him?

Ans.—I do wholly, without any qualification.

Dr. Daniel Brainard deposed:

I am a Physician and Surgeon, and have been President of the Faculty of Rush Medical College since its organization in 1843.

Ques.—Do you know Dr. J. W. Freer? If so, how long have you known him, and what is his standing in the community as a gentleman, teacher, Physician and Surgeon?

Ans.—I do know Dr. Freer very well; I have known him sixteen or eighteen years. I should say his standing was good.

Ques.—Do Physicians maintain any professional relations with Homœopathic doctors, as such? If so, to what extent?

Ans.—They do not maintain any professional relations with them.

Cross-Examination. *Ques.*—Do Physicians never consult with Homœopathic doctors?

Ans.—Not unless they violate the rules of their profession.

Ques.—Is it a rule of the profession not to consult with them?

Ans.—It is.

Ques.—Is that a written rule?

Ans.—The rule is, not to consult with quacks. They are included in the minds of the professton under that name. I would not undertake to say whether they are named specially. There is a written rule that the profession should not consult with quacks.

Ques.—Is that the rule to which you refer where you say, that it is a rule of the profession not to consult with Homœopathic doctors?

Ans.—It is.

Ques.—Am I to understand you as holding, then, that all Homœopathic doctors are quacks?

Ans.—Yes.

Ques.—What do you mean by quacks?

Ans.—I mean a man who holds himself out to the public for the cure of diseases by some special system, or medicine, different from that used by others.

Ques.—Do you never, yourself, consult with Homœopathic doctors?

Ans.—Not if I know them to be such.

Ques.—Have you ever taken the pains to acquaint yourself with the theory and practice of Homœopathy?

Ans.—I have. I have read some of their standard works on the subject.

Ques.—What is it that you especially condemn in their theory and practice?

Ans.—I condemn the theory on which their system is founded, "similia, &c," and the use of infinitesmal doses.

Ques.—Did you ever in your own practice adopt their mode of treatment?

Ans.—I never did, except so far as it may be embraced in the doctrines of the profession.

Ques.—How, then, can you condemn it without having tried it?

Ans.—Because the principle upon which it is founded is contrary to my knowledge of medicines in many cases, and because administering medicines in infinitesmal doses is absurd, and because it has been tested on a large scale by hospital Physicians of eminence.

Ques.—Have you read the list of diseases which are given as grounds of exemption?

Ans.—I have not particularly read it. I have the regulations; have not read them lately.

Ques.—In determining whether an applicant had any of those diseases, would there be any difference between your school and the Homœopathic school?

Ans.—I think there would. I think my school would be more competent to determine them than the man who studied Homœopathy.

Ques.—Suppose that, instead of studying simply Homœopathy, he had graduated at one of your own Colleges, would there be any difference?

Ans.—I think there would. If he had studied medicine so as to become well informed in it, and then practised Homœopathy, I should think he was not an honest man, and therefore not to be trusted.

Dr. V. L. Hurlbut, being duly duly sworn, says:

My name is V. L. Hurlbut. I reside in Chicago. Am a Physician and Surgeon by profession, of the regular School.

Ques.—Do you know Dr. N. F. Cook? If yea, did you ever have a conversation with him in respect of his motives in commencing practice in this city as a Homœopathist? If so, when, where, and who introduced it?

Ans.—We had a conversation in reference to a Masonic meeting, in which he invited me to attend a certain meeting, and he said if I failed he would attribute it to our differences in medicine. This was about the last of last February, I think. He introduced the subject in this way. He said they, the Homœopaths, were all right if we would let them alone. He said that they did not confine themselves to infinitesmals, any more than we did to large doses, and that if we would only let them alone we would all come together dove-tail—putting the fingers of both hands together to show the manner. He went into it because he was ambitious and wanted to get a position as soon as he could. He remarked that he (Dr. Cook) had lectured at the Hahnemann College, I think, a day or two before, on Pneumonia; that there were a number of Rush Medical College students present; that these students remarked the similarity of views as to treatment and theory of the disease; of the two, they, the students, thought he was rather more severe than Dr. Allen in the Rush. This conversation occurred at Ambrose & Jackson's restaurant, perhaps eleven or twelve o'clock at night.

Dr. William C. Hunt, being duly sworn, says:—

I am a physician and surgeon, and reside in Chicago.

Ques.—Do you know Dr. J. W. Freer, if yes, how long have you known him, and what is his standing in this community as a physician, surgeon and teacher?

Ans.—I know Dr. Freer. I have known him fourteen years past. I think he ranks among the best as a physician, surgeon and teacher.

Ques.—Do you occupy an office with him, and have you done so for some time past?

Ans.—Our offices adjoin, there is a door between.

Ques.—Do you know what his rule has been as Enrolling Surgeon, in respect to the examination of applicants for exemption, at his private office?

Ans.—He has, I think, universally refused to examine any one there.

Ques.—Do you know a man by the name of L. M. Bennett, a witness here, if yea, did he apply to you for medical treatment, and what did he say his difficulty was?

Ans.—I know Mr. Bennett. He applied to me to treat him for disease of the kidneys.

Ques.—Did you treat him, and what was his disease?

Ans.—I did treat him. I gave him one prescription. I found no disease of the kidneys. He said he had a disease of the kidneys, and that Dr. Beebe had treated him for it.

Ques.—How did you arrive at the conclusion that he had no disease of the kidneys, state the test?

Ans.—I examined his urine chemically and microscopically.

Ques.—What was the matter with him, if anything?

Ans.—It was a constitutional disease, dyspepsia, or what we would term malassimilation.

Ques.—Have you, and to what extent, assisted Dr. Freer in the discharge of his duties as Examining Surgeon, and what has been his treatment to those he has had occasion to do business with officially?

Ans.—I have assisted him for about five or six months altogether. So far as my knowledge goes, his treatment has been uniformly gentlemanly, and according to the regulations.

Ques.—How do you regard the position of Examining Surgeon at such a place during the pressure of a draft; is it an easy position, or one of great responsibility and perplexity?

Ans.—I think it one of the most perplexing positions that a professional man can be placed in. It is one that requires a great deal of skill and a great deal of patience and care.

Ques.—Did you ever hear him say anything in that connection of Homœopathic Physicians, and if so, what?

Ans.—Yes, I have. That he could not take the statements of those men, nor their affidavits, and other statements in substance to the like effect.

Ques.—Did he say why not?

Ans.—He regarded them as mountebanks, charlatans, imposters.

Ques.—Did you ever hear him say they were damned old thieves?

Ans.—I never heard him say they were damned old thieves, I have heard him say they were no better than thieves, though not in the presence of their patients. This would be in conversation with me. I can't say exactly when; we have been together so long, and have had such conversations. I can't say whether he ever said this in the presence of others.

Ques.—Was he in the habit of using such language?

Ans.—I think he has used it to me several times, I can't say that he ever did to any one else.

Ques.—Did you not hear him say that Dr. Small was a damned old thief?

Ans.—I don't know that I ever did, I can't say that he singled out any one of them. I would not like to say that I ever heard him say that of any one of them.

Ques.—Did you ever hear him speak of Dr. Small individually?

Ans.—No, sir, I can't remember any instance. I have heard him mention Dr. Small, but can't recall the conversation.

Ques.—Did you ever hear him speak of Dr. Cook?

Ans.—In the same way I have heard him speak of Dr. Small, slightingly, of course.

Ques.—Did you ever hear him mention any other Homœopaths in the same way?

Ans.—I have heard him speak of Dr. Ludlam, and all the others whose names have been brought before us, in the same way.

Dr. I. P. Lynn, being sworn, says:

I am a physician and surgeon, and reside in Chicago. I have practised here since 1851. I have assisted Dr. Freer as Examining Surgeon, at the Provost-Marshal's office, through the months of August, September, and most of Oct.

Ques.—Were you present when Dr. Beebe came to the office with L. M. Bennett, if yea, state all that was said between the three parties, and how Dr. Freer conducted himself on that occasion?

Ans.—I was present. Dr. Beebe came in with a gentleman, an applicant for exemption, introduced him to Dr. Freer, and handed the latter his certificate. The Doctor examined the certificate and returned it to him, and stated that he would not be governed in his action by any statements he or any other Homœopath might make, in reference to applicants for exemption. Beebe asked him if the certificate was in proper form. He said yes, that he did not refuse it on that account, that he did not wish to bandy words with him. That was all. The whole transaction did not occupy the space of more than two minutes.

Ques.—State carefully the conduct of Dr. Freer towards those with whom he

has been required to do business officially, during all the time you have observed him in this office?

Ans.—His conduct has been gentlemanly, courteous, and accommodating. I think he has been very careful and honest.

Ques.—Doctor, is there any association with, or recognition of Homœopathic Doctors by physicians, so far as you know?

Ans.—There is not.

Ques.—Have you been in a position to know the sentiment of this community so far as it has been expressed, as to Dr. Freer's administration of his duties, and have you heard any complaints against him, except by the witnesses that have appeared here?

Ans.—I have never heard him censured, except by this class of men, that have made their complaints here. I have heard his conduct spoken of approvingly by various persons who have business to do with the office.

Ques.—Who was the man that came in with Dr. Beebe?

Ans.—I don't know.

Ques.—What disease did he have?

Ans.—It is my impression that it was some affection of the Urinary organs, but am not certain.

Ques.—Were you in the office when they came in?

Ans.—I was in, and was present during the whole interview.

Ques.—How were you engaged at the time?

Ans.—I was an observer of what was going on.

Ques.—Was that all you were doing?

Ans.—I did nothing but witness this interview, if I had applicants to examine they waited.

Ques.—Are you sure that nothing else was said, than what you said in the direct examination?

Ans.—I think nothing else of any importance.

Ques.—Are you sure nothing else was said?

Ans.—Beebe may have said something else, but Dr. Freer refused to talk with him, and he (Beebe) went out of the room, leaving the applicant in.

Ques.—Was nothing else said by Dr. Freer?

Ans.—When Beebe called his attention to his rank and title, Dr. Freer spoke saying he was aware of his rank and of the means he took to obtain it. I think Beebe made no reply. That was all he said. I am positive Dr. Freer said but little, as he refused to talk with him. Beebe was decidedly loquacious. Dr. Freer said nothing after he refused to talk with him. I don't know that Dr. Beebe made any remark on Dr. Freer's refusal to converse with him, if he did, it was probably not addressed to him. If he did I did not pay any attention to it. I think Dr. Beebe stated, either as he was leaving the room or before, that he would carry the thing to Washington. I don't think Dr. Freer replied to Beebe at all. I took no part in this conversation.

Josiah M. Patterson, a witness, produced and sworn, says:

I am 56 years of age, and reside in Chicago.

Ques.—Do you know Dr. Beebe, if yea, did you call upon him to treat one of your knees that had been injured, and when; what did he say was the character of the injury; did he change the dressing after the first dressing, and how, and when, and what was the second dressing?

Ans.—I know Dr. Beebe. I called on him to treat my right knee, that had been injured, and he attended it. He said the knee pan was broken into four pieces, patella he called it. He dressed it, putting the leg into a straight position. Three or four days after the first dressing he came again to dress it, and brought with him an apparatus which he called a double inclined plane, and put my leg in it, and bent it in this apparatus so that it was about one-third bent. I

kept it in this apparatus about twenty-five or thirty minutes after he left, when I took it off, the knee pained me so much I could not keep it on. He came to look at it once after that, and said that perhaps it was well enough, if the inclined plane gave me pain, to take it off.

Ques.—How long after the injury before you could bend your leg?

Ans.—I could bend it, say a week afterward, could raise it up, it pained me to flex it, though not acutely, after the first two or three days.

Ques.—Are you sure he placed your limb in a bent position, in the inclined plane, three or four days after the injury?

Ans.—I am sure, and it would not exceed three or four days after the injury. He said it would relieve it to place the limb in that position.

Dr. Beebe dressed the leg in company with Dr. Fraser. Dr. Fraser is a Homœopathic Physician, in company with Dr. Blanchard. By turning my head I could see my foot while it was in the plane, though I don't recollect that I looked at it, it was not attractive. I took especial notice how my leg was dressed. I noticed how it was dressed in the first place. It could not be changed a quarter of an inch without my knowing it. I am something of a mechanic and notice such matters.

The testimony of Hon. S. A. Goodwin is omitted, as it is merely with reference to Surgeon Freer's general and professional reputation.

Thomas Boyle, being sworn, says:

I am 27 years of age, and am a merchant, residing in Chicago.

Ques.—There has been an affidavit filed with the Board in this matter, purporting to have been made by you, did you ever make that affidavit?

Qns.—I did.

Aues.—You state in that affidavit that about the 16th of Augnst, 1864, your brother, Wm. H. Boyle, and yourself applied to the Enrolling Surgeon in this District (Dr. J. W. Freer,) for exemption from draft, is that affidavit true in that respect?

Ans.—I applied myself, my brother did not go with me.

Ques.—Who presented this affidavit to you, to swear to?

Ans.—Dr. Hale, partner of Dr. Small.

Ques.—Who drafted the affidavit?

Ans.—I don't know.

Ques.—You swear that your brother applied for exemption on account of disease of the heart, how do you know if you were not present?

Ans.—I only know from what he told me. All the statements in that affidavit so far as they apply to him, I only know from what he told me. In the affidavit, where I am made to say that my Brother did not apply to Dr. Freer for medical advice, I know nothing on the subject except what he told me. I only know from what he told me that Dr. Freer requested my brother to report to him in a few days.

Ques.—Did you know that you were swearing in that affidavit to a series of alleged facts of which you could have no personal knowledge?

Ans.—I did not.

Ques.—Did Dr. Hale request you to sign and swear to that affidavit?

Ans.—Yes, sir.

Ques.—Did he know that you had no personal knowledge of the facts therein recited, so far as they related to the interview of your brother with Dr. Freer?

Ans.—He did. I expressly told him. He said he wanted it so as to get a continuance until my brother returned.

Ques.—Did you suppose there was anything in the affidavit which showed of itself that it was stated on hearsay?

Ans.—I so stated to the Notary at the time he read the affidavit. I don't know whether Dr. Hale read it or not.

Ques.—Did Dr. Hale say anything to indicate that he supposed the affidavit to be hearsay?

Ans.—Yes. I remarked to him that it would not be good for anything because it was hearsay.

Ques.—What reply did he make?

Ans.—He said he only wanted it for a continuance until my brother arrived.

Ques.—Did you mean to say in that affidavit that you and your brother went together, or that you went?

Ans.—Only that we went.

Ques.—At your first conversation with Dr. Hale relative to this affidavit, did you tell him substantially the same story as is contained in the affidavit?

Ans.—Yes, sir, and also said it was only hearsay.

Ques.—Did you tell him that you and your brother went together?

Ans.—No, sir.

Ques.—Did you tell him that all you knew of the affair, as it related to your brother, you derived from his statements?

Ans.—I did.

Ques.—The second time he called on you did he bring the affidavit with him, and did you go with him to a Notary to swear to it?

Ans.—He brought the affidavit with him, and I went with him to a Notary.

Ques.—When you swore to that affidavit of positive statements, did you tell him and the Notary that as to all the statements relating to your brother, you only knew them by hearsay?

Ans.—Yes, sir. The Notary made no reply that I know off; Dr. Hale handed me the affidavit and I read it over. I made no objections to signing it when at the Notary's. At the store I told him it was only hearsay evidence.

I. L. Millikin, being duly sworn, says:

I am 51 years of age. I am Enrolling Commissioner for this District. I have resided in this city for 27 years.

Ques.—Have you been Mayor thereof?

Ans.—I was in A. D., 1854.

Ques.—Do you know Dr. Freer, Enrolling Surgeon, if so, how long have you known him, and what is his standing as a physician and surgeon and gentleman?

Ans.—I know Dr. Freer, have known him, I think, about twenty years. I have always supposed his standing to be good in all these respects. As it respects his standing in his profession I have heard it spoken of as eminent.

Ques.—Have you observed the manner in which he has discharged his duties as Examining Surgeon in this District, if so, how, and your means of knowledge?

Ans.—I have been associated with him in this business, so that I have had an opportunity to observe his manner. I think he has been very attentive, careful and discreet in his examinations. As a general thing I have considered him kind and courteous to those he has had to examine.

It is, perhaps, unnecessary to state that the Provost Marshal of the district, after hearing the testimony in the case, reported to the proper bureau in Washington, that "the charges were wholly without foundation," and that, in his opinion, "they were groundless and unworthy of note." Furthermore, that in the discharge of his official duties, "Dr. Freer had been always found courteous, kind and obliging," exer-

cising a "most remarkable forbearance," although oftentimes annoyed by the importunities of those seeking exemption from the draft without reasonable cause or excuse therefor.

Tedious in detail as the case may seem to the casual reader, it is nevertheless one which should attract the attention of every lover of scientific medicine. With the exception of the brazen attempts of homœopathists to foist themselves into the Medical department of the army, (one striking instance of which is developed in the foregoing testimony,) there has scarcely ever been a bolder effort upon the part of schismatics to bring themselves into official notice. From the evidence it is seen that at least one homœopath succeeded in securing a temporary position in the military service by concealing his real opinions, and he has the effrontery to claim his successful fraud as proof of his own, to be presumed respectability! Does the reader wonder that Surgeon Freer distrusted a certificate signed by one who unblushingly swore to his own shame?

The leader of the onslought upon Surgeon Freer was one G. D. Beebe, who treated Josiah Patterson for comminuted fracture of the patella, six pieces! Look now at the testimony on that point and see whether G. D. Beebe, who hid his homœopathic proclivities from the National Examining Board, is surgeon enough, or honest enough, even supposing other qualifications abundant, to have his certificate of disability treated with a grain of respect. The Federal Constitution prevents us adding a word to the record: "Cruel and unusual punishments shall not be inflicted."

The next complainant and witness is one A. E. Small, a person who strenuously insists that he does not know Dr. Freer, (although six years ago, in an advertising sheet scattered indiscriminately in the door-yards and barn-yards of the city, in juxtaposition with Lock hospital and "Dr. D.'s" circulars, he publicly addressed him in a series of scurrilous and blackguard articles.) This man testifies that he knows *nothing personally of the matters alleged.* He *knows* nothing

except that he is one of a committee of the Homœopathic fraternity. *He* is only a kitten whose paws that monkey uses to pull nuts from the fire. He swears that he regards Hahnemann as "a very learned and devoted lover of truth, and one of the most scientific physicians of his time"—smelling bottle and all especially endorsed! Does not call himself a Homœopath—*lucus a non lucendo*—but is a Professor in a Hahnemann college and an compiler of a Homœopathic book. He swears that "Allopathic" students are instructed in all the branches of the scientific curriculum, but paternally adds that he thinks "if they would only study Homœopathy they would be greatly benefitted." Works of fiction have been recommended by many abler men than even Mr. Small as an addition to the harsh and dry reading of earnest students.

Let it be put on record that this man Small *swears* he never was a "Botanic" doctor in the State of Maine. Our previous sympathy for the State of Maine is to this extent ameliorated. The city of Philadelphia, which for many years was blessed by his presence, and the infinitesimal college therein, (long since gone into hopeless desuetude,) still remain to give us room for melancholy.

N. F. Cook swore that he knew nothing—that he was only a Homœopathic committee-man. How Homœopathic *he* is, the evidence of Dr. V. L. Hurlbut abundantly discloses. N. F. Cook is noticeable only as a variety of a species, and there are but two species in the genus. One is ignorant, the other knavish. The varieties are mixtures.

One man who kept clear of the committee and clear of the witness stand, the testimony of Thomas Boyle shows to have been named "Dr. Hale." This man Hale, the witness swears, presented him a carefully drawn affidavit to sign and swear to, knowing that he (Boyle) had no personal knowledge of the alleged facts. He (Hale) stated in reply to witness' conscientious scruples to swearing to mere heresay evidence, that it was "only to procure a continuance." This man Hale brought an affidavit containing what the witness himself

admits to have been falsehoods, and induced the witness to swear and sign it, "to procure a continuance!" The atrocity of the act carries its own comment.

Sworn to as positive—sworn to as heresay only! The position of "Dr. Hale"—he may perhaps consider an enviable one—we only place him by the side of *Small* (in the comparative degree) and say *Par nobile fratrum.*

The "lay" evidence in this case on the part of the complainants is too contemptible, too frivolous, and, on the part of the witness most depended upon, too thoroughly mixed with very bad whiskey to need remark.

The attack upon Surgeon Freer, trumpeted by all the Lilliput of medicine as one which was to overwhelm him, and with him legitimate medicine, has not only failed but shown itself an abortion begotten by Folly upon Fraud and sent into this breathing world not even half made up.

Chicago, it may be mentioned to country readers, is a peculiar city. It has been the rendezvous of men of desperate fortunes and uncertain morals, as well as of men of of enterprise and far-seeing sagacity. The Ishmaels whose hands are against every man are abundant. In the lottery of chances incident to the growth of a great city many men of limited capacity and even gross ignorance have been thrown into notice because of their accidental wealth. Men of this cast, and especially their wives, are addicted to the wildest, the absurdest follies. Among their pet absurdities, Homœopathy is one of the most prominent. "Down East" doctors "gone to seed" at home come here and pander to these *parvenues* by titillating their palates with infinitesimals, and to their self-complacency by the arts of the sycophant. *Parvenu* "doctors," just loose from some Homœopathic college, (God save the mark!) please the fancy of shoddy goddesses by their neck-ties, dancing-master airs and equipages. Shoddy is triumphant, and infinitesimals rampant. "It is *so nice* and so much the thing, you know, to take sugar plums and pellets rather than gross mixtures!"

We have only to say to those of our readers who hear that Chicago is homœopathic, that the physicians of this city in good and lucrative business number at least ten times the quacks of the homœopathic persuasion or practice. Even "shoddy" is beginning to be nauseated with its pellets and dilutions. The immense majority of the intelligent citizens of Chicago adhere to the regular profession and scorn the knavery of the infinitesimal charlatans with a depth of feeling quite equal to that entertained by the present writer, which, it may be explained, approximates as nearly as possible the sentiments of Surgeon Freer.

REPORT ON ORTHOPEDIC SURGERY,

MADE AT THE ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY, CONVENED IN CHICAGO, MAY 3D, 1864.

By DAVID PRINCE, M. D., Jacksonville, Ill.

(We give in this number of the *Journal* the concluding portion of Dr. Prince's valuable Report, embracing the original and practical parts, with appropriate illustrations. The former portion may be found in the *Journal* for October, November, and December, 1864.—*Editors.*)

APPARATUS.

In the older plans of treatment, still retained by many of our surgeons of reputation, some immovable and inelastic frames of wood or iron, properly padded, was employed to bring the foot around into proper position; the apparatus being changed for another of different shape as the restoration progressed, or adapted with joints to change with the changing shape of the foot.

The simplest and oldest form is a flat splint, to apply to the leg, with a flat, thin foot-piece, the edge of which was fastened

upon the end of the splint, in the form of a cross, upon which the foot and leg was bound by roller-bandages. In contrast with the simplicity of this, are the complicated machines, invented by Scarpa, Scontetten, and others, in the beginning of the great awakening upon the subject of orthopedia, about thirty years ago.

Scarpa's shoe has an iron sole, an iron heel-piece at right angles with this, and a brace running up the leg, while a spring attached to the side of the shoe, gives a pull with some elasticity for straightening the incurved foot; all this is properly padded and provided with straps and buckles. The vertical brace passes up on the projecting or convex side—upon the outer side in talipes varus. The illustration, fig. 5, shows the iron frame-work of the complicated machine.

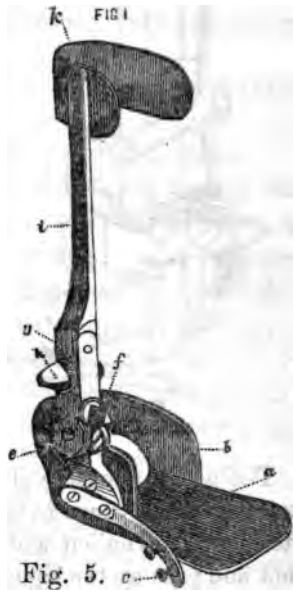

Fig. 5.

Explanation.

The shoe is in a straight position, *a* the sole, *b* the semi-circular portion to embrace the heel, a portion behind is cut away, leaving a hole for the end of the heel to protrude; *c* the horizontal spring for abduction of the foot; *e* a hinge in the upright portion; *f* a triangular screw-head which is turned with a key, and causes the point of the instrument to turn down; *g* another hinge; *h* another triangular screw-head, which, being turned with a key, bends the foot part outward; *i* the upright shaft or brace; *k* the semi-circular part to go round the leg, and act as a fixed point of the apparatus.

Scontetten's apparatus differs from Scarpa's chiefly in having two shafts, one passing up on each side of the leg. Fig. 6 illustrates it without all its padding.

Dr. Bauer, in his work already so often quoted, employs a slight modification of Scontetten's apparatus, as the utmost advance in the art at the present time.

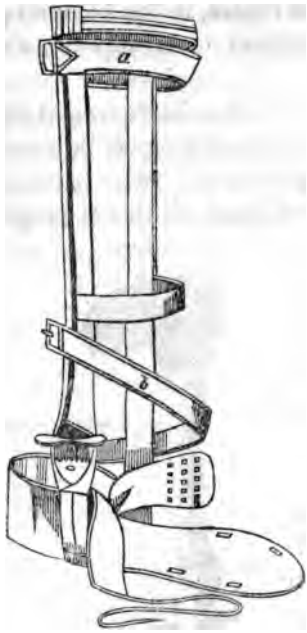

Fig. 6.

These machines, however, are not well adapted to any species but T. equinus and T. varus, and for each varying size of foot, an expensive apparatus must be made. They are uncomfortable, extremely liable to produce ulceration, almost destitute of elasticity, acting chiefly upon the ankle-joint, and moving the foot as a whole, failing to move the tarsal joints upon each other as is done when the foot is grasped by the hand. They are difficult to make except by skilled instrument makers. The desideratum is a method which is within the skill of any person of ordinary ingenuity, to be made of materials always at hand, and free from expensiveness.

The use of adhesive plaster, introduced about the year 1850, was a great advance in the art. The method consists in cutting strips of convenient width and long enough to envelop the foot and pass up the leg nearly to the knee, there to be fastened in place by circular strips passing round the leg, over which the upright strip (or strips, for there usually must be several of them), are turned so as to clinch them to prevent their sliding.

For T. varus the plaster ascends on the outside, and for T. plantaris, and T. valgus on the inside, and for simple T. equinus, on both sides. It is sometimes found convenient to carry the fastening above the knee for greater space for application of the plaster.

This expedient holds the foot in the position in which it is placed by the hand of the surgeon, except a little sliding that plaster will always be guilty of. It very soon occurred to me that a piece of elastic rubber ribbon could be interposed in the vertical strip of adhesive plaster, so as not simply to hold the foot in the position in which it was left by the hand, but to be constantly gaining by a yielding but unintermitting stretch, night and day, gradually elongating the opposing muscles and ligaments, and by the slight mobility attending the elastic rubber, permitting some passive motion in the muscles assisted by the elastic appliance, whereby their circulation is increased, with a more rapid nutrition and a more speedy accommodation to their altered length of contraction.

I for sometime supposed this to be the last advance of which the art was capable, but, ulceration sometimes occurred upon the edge of the foot, where the circulation was too much impeded by the circular compression of the plaster around the foot. There seemed to be a lack of some expedient by which the fold of the tarsus could be straightened out, so as to restore the foot to its normal breadth. An obstinate case, attended with ulceration of a delicate skin, led me to devise an appliance which is a tolerable substitute for the hand; but before describing it, a few pages must be devoted to the plan of treatment pursued by Mr. Barwell, to explain which, his book (on Club-Foot, &c.) seems to have been chiefly written.

The peculiarity of Borwell's plan consists in his method of attaching the proximal end of his tension apparatus, which is this: Starting with the idea of making the artificial tension the exact complement of that of the partially paralyzed muscles, he aims to act as nearly as possible upon the same bones to which these muscles are attached, (and in the same direction), by adhesive plaster fastenings, while the points from which the pull comes are the origins of these muscles.

Thus, for T. varus, the fastening is made on the exterior anterior side of the upper part of the leg, at a point over the origins of the peronei muscles, in such a way as to get two-

thirds of the length of the leg for the position of the rubber spring upon which he relies for the pull.

The lower attachment is made to imitate as nearly as possible the insertions of these muscles; but for retention to the skin, the lower adhesive plaster passing downward over the cuboid and fifth metatarsal bones must cross the bottom of the foot, and fasten upon the inner side above the sole. In order to get a retention of the rubber spring upon the upper part of the leg, a broad strip of adhesive plaster, twice the length of the leg, is applied over the course of the peronei muscles, over the fibula, and upon this, a piece of tin, a little narrower than the plaster, is laid, and the lower end of the plaster turned up over it, so that the inside (or sticky side) is outside, for adhering to the roller that applies round the whole to hold it fast. The upper end of the tin is turned over from the leg, and has a hole punched in it, and into this hole an eyelet is inserted; a similar eyelet is inserted in the adhesive plaster which passes across the bottom of the foot, and between these is stretched a rubber spring. By the combination of two or more of these expedients, he is enabled to obtain tension which imitates the combined action of the peroneus longus and p. brevis, passing behind the external malleolus, and the peroneus tertius, passing in front.

For talipes valgus, he makes a similar appliance on the inner side of the leg and foot, to supply the deficiency of the partially paralyzed tibialis anticus and tibialis posticus. The pull must here be in two directions as in the other case.

In talipes plantaris, (flat-foot,) he makes a direct lift upon the hollow of the foot, by an anterior appliance compensating the deficient lift of the tibialis anticus.

In talipes equino dorsaris, he makes also a direct lift further forward. He explains this deformity as being the direct opposite of talipes plantaris, or flat-foot, in which the medio-tarsal joint sinks too low, hence it must be lifted up; while in talipes equino dorsalis, the same joint rises too high, while by the contraction of the tibialis posticus, the peroneus longus,

the p. brevis, and the flexor longus digitorum, the metatarsus is flexed or drawn down, bringing the toes to the ground, while again the instep or "waist" of the foot rises too high. He thinks the action of the sural muscles, through the tendo achillis, on the calcaneum, a minor element in the deformity, and hence a particular objection to the division of the tendo achillis, in addition to the general objection arising from permanent injury to the tendon.

The account would be more nearly correct to say, that in addition to the contraction of the tibialis posticus and flexor longus digitorum, the foot is arched too high by the shortened condition of the adductor pollicis, the flexor brevis digitorum perforans, the abductor minimi digiti, and the musculus accessorius, with shortening of the plantor fascia to correspond with this disproportionate contraction of these muscles.

The pull directly in the line of these tendons, besides being a refinement of treatment difficult, and sometimes impossible to execute, is one which acts at a great mechanical disadvantage, implying a greater pressure upon the skin, to accomplish a given amount of change of position, than would be required by a direct pull.

If it had been the design of nature to make only slow movements of the extremities, there would have been nothing gained by binding down the tendons under transverse ligamentous substances as they pass the joints. A much smaller force would have accomplished the purpose, by acting in a straight line between the origin and the insertion of any muscle. The facility of movement and grace of form secured, by giving the tendons oblique attachments, are elements unnecessary to be regarded by the orthopedist. There is this great disadvantage in this attempt to imitate the oblique action of the muscles: that the pressure upon the skin is three or four times what it is necessary to make it, when the most direct pull is obtained. The importance of gaining the most power with the least pressure upon the skin of the foot can hardly be exaggerated. Ulceration of the foot, where the pressure applies, is the greatest difficulty which it has been the study of surgeons to avoid.

It can not be said that the muscle which is partially paralyzed is more assisted by the oblique pull than by the direct, for the passive motion of the muscle is communicated by the push and pull of the tendon; and this *to* and *fro* movement, must be the same for a given amount of motion of the parts to which the tendon is attached, whether the movement is effected by an oblique pull in the direction of the attached end of the tendon, or by a power acting at a less mechanical disadvantage, like the hand of the operator, or any apparatus which acts in a similar manner.

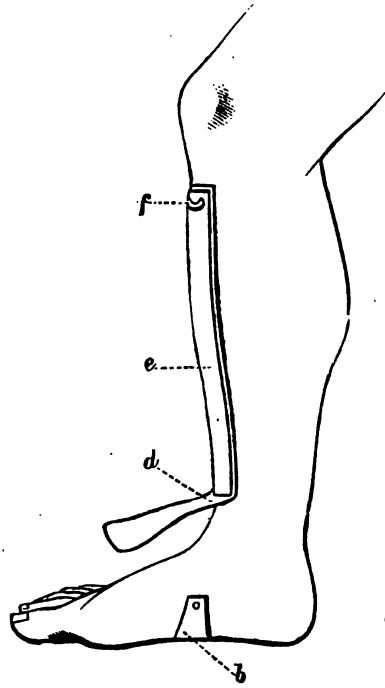

Fig. 7.

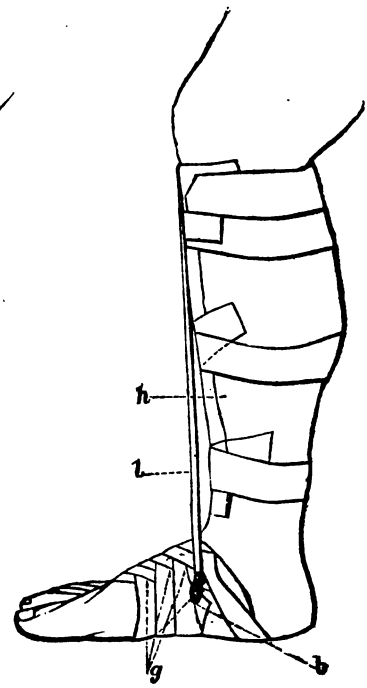

Fig. 8.

Illustrations of Barwell's Method.

Fig. 7 shows the manner of applying the plaster over the tibia, and the tin over it, and the plaster under the sole of the

foot for T. plantaris: *a* a trapezoid piece of plaster into which an eyelet has been fixed, adhering to the sole of the foot, to act as the insertion of the tibialis anticus tendon; *d* a strip of plaster adhering over the tibialis anticus muscle, and having its lower end hanging down more than the length of the limb. The letter *d* is upon the upper portion of this free part; *e* a piece of tin carrying at the top a wire loop; *f* the free end of the plaster is turned up on the tin, and a roller applied to hold all fast.

Figure 8 shows the process completed. The lower end of the long piece of plaster has been turned up over the lower end of the tin, and in the figure circular investments of plaster are shown instead of a roller; *g* strip of plaster surrounding the foot, but leaving out the end of the plaster *b* having an eyelet in it; *l* a rubber spring running from this eyelet in the plaster, which comes from under the sole of the foot, up the leg to the wire loop at the upper end of the tin.

Figure 9 shows the application of the same plan in the treatment of T. varus. Two springs are shown, imitating the action of the peroneus tertius in front of the external malleolus and the peroneus longus, and p. brevis behind the malleolus.

m A trapezoid piece of plaster applied across the bottom of the foot and having an eyelet. The course of this under the circular strips is marked by dotted lines *n*. It is represented as being split so as to embrace the fifth metatarsal bone. *n* The eyelet for the attachment of the rubber spring by a piece of catgut or other strong cord. *o* Circular strapping, covering but one piece of tin, placed just behind the fibula, with its layer of plaster on either side. *v* The remainder of the longitudinal strip of plaster brought down and adherent to the circular ones. *t* A rubber spring assisting the peroneus tertius. *u* A rubber spring assisting the p. longus and p. brev. At the lower part of the attachment of the spring, marked *u*, is an arrangement for changing the direction of the force, by an attachment around the limb. *v* A short piece of rubber tube covering a hook, by which the spring is attached to the

eyelet in the upper end of the tin. All the attachments are covered in the same way in practice to shield the hooks from the clothes.

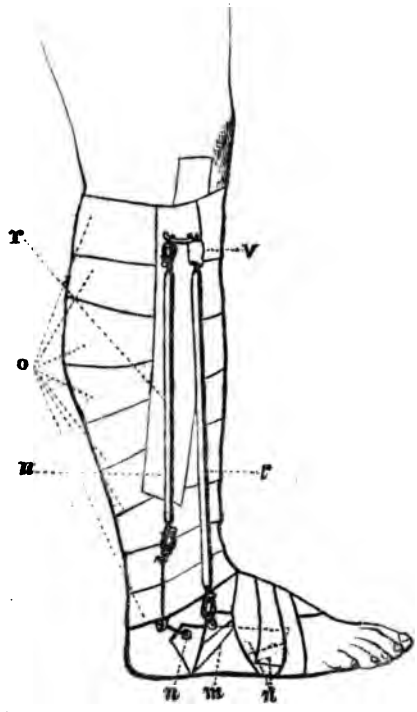

Fig. 9.

In obtaining the pull from a space directly over the elongated muscles, by the plaster and tin appliances, a very considerable pressure is produced over the whole circumference of the part. We know that a moderate pressure like that produced in health by the skin and fasciæ, and by a laced stocking, when these are relaxed in varicose veins of the extremities, is favorable to muscular tone, but a greater degree of pressure, like that produced by ligating a member for cramp, is unfavorable to muscular contraction. It is feared that in this method of obtaining the resistance to the pull of the artificial muscle, directly over the muscle whose weakness is to be compensated, there may be a temptation, in hands more unskillful than those of Mr. Barwell, to bind the limb so tightly as to interfere with the most rapid restoration of the muscular function. This tightness is almost necessary, in order to prevent the tin with its underlying adhesive plaster from sliding.

The application of adhesive plaster to the foot, as employed by Barwell, does not materially differ from the method for many years in common use. The plaster cannot be stuck to the skin as the tendon is stuck to the bone. It must have a

considerable breadth of attachment or it will slide off. This necessary extent of surface cannot easily be obtained upon the foot without carrying the plaster round upon the opposite edge, so that its pull must approximate the bones of the metatarsus and of the phlanges. This force is the direct opposite of that which is produced upon an inverted club-foot (talipes varus) by walking upon it. The weight of the body, in walking, comes upon the cuboid, the fifth metatarsal bone, and corresponding phalangeal bone until, by folding and twisting, the foot is still further turned, so as to bring the weight of the body upon its dorsum.

The plaster takes hold of the opposite or inner border, (in talipes varus), and passing under the foot and up on the outside pulls in the opposite direction. In all this there is no tendency to take the longitudinal fold or doubling out of the foot. The force simply untwists the malposition of the cuboid in relation to the calcaneum, and the cuneiform bones in relation to the scaphoid, and, more than all the others, the scaphoid in relation to the astragalus. To the extent of the tilting of the astragalus in the ankle-joint, and the sliding of the calcaneum upon the astragalus, these deviations are also corrected.

It is obvious, by a glance at the skeleton, that an important agency in reducing the slight dislocation of the cuniform bones upon the scaphoid, and the principal dislocation of the scaphoid upon the astragalus, is the unfolding of the foot to give it transverse breadth. This is one of the most important indications in cases in which the patients have been some time walking. It is easy enough to answer this indication with the thumb and fingers taking hold of the foot and twisting it in directions opposite to those of the distortion; but the thumb and fingers soon tire out. It is possible to employ a succession of hands for that purpose, and this would probably be as effectual as any more artificial method. The desideratum is the invention of apparatus which will do what the thumb and fingers can do, and do it without tiring out, and

without danger of producing ulceration from the persistency of unyielding pressure. The device to answer this end, without much expense, and in a method so easy of execution that it can be readjusted every day or two, is simply this:

For a patient 10 years old, take a sheet of gutta-percha one-third of an inch thick, or a sufficient number of thinner sheets to make that thickness, long enough to encircle the foot, and wide enough to extend from the middle joint of the phalanges to the medio tarsal articulation, between the scaphoid and astcagalus above, and the cuboid and calcaneum below. Apply upon both surfaces of the gutta-percha an investment of muslin of good strength, and lay the whole, thus preprred, into a pan of water nearly boiling hot. While the softening process is going on, the foot should be wrapped with a roller, protecting the prominent points with pledgets of lint or cotton.

As soon as the gutta-percha is thoroughly softened, it is taken out, still lying between its muslin investments, and so applied that its ends come together on the outside of the foot in talipes varus, where the two extremes of gutta-percha should be welded by pressure between the thumb and fingers, previously dipped into cold water to keep the material from sticking to the fingers.

In talipes valgus the extremes of gutta-percha meet and project on the inner or median side of the foot. While the material is yet warm and yielding, a square piece of pasteboard is laid upon the dorsal surface of the foot with a corresponding piece of oiled silk or rubber cloth, underlying it, to prevent its softening by the moisture of the wet muslin investment, and a similar piece of pasteboard is applied directly opposite upon the plantar surface.

A common pair of calipers, with screw fastening, is then applied, so that one leg rests upon the pasteboard upon the dorsal, and the other upon the pasteboard upon the plantar surface. The screw is then turned to secure very firm squeezing between the opposing points. This compression is con-

tinued until the gutta-percha has become hard and unyielding, except by its elasticity. After this the calipers are removed.

A hole is then punched through the projecting gutta-percha, along side of the metatarsal bone of the little toe in varus, and of the great toe in valgus. Into this hole a cord is inserted, which is fastened to a rubber ribbon or piece of rubber tube or cylinder, which must again have its attachment above by adhesive bands below the knee, above tne knee, or by a padded roll to the pelvis which is thereby encircled. This last is the least troublesome attachment, as it can, at any time, be slipped off and put on again. In the last method a knee-cap is necessary to make the tension cord follow the angle of the limb in walking and sitting. The appliance to the foot should be removed and re-applied every day in hot weather, and every alternate day in cold weather, to avoid excoriation from pressure and retained exhalations.

The pressure, if too long applied to a part, without intermission, favors absorption with ulceration; or, if acting with sufficient force, the death of the compressed parts, resulting in sloughing; while the moisture from the skin, with the ammonia which it contains, favors a softening or solution of the cuticle, thus increasing the natural sensitiveness of the parts to pressure.

Figure 10 illustrates the method of applying the apparatus in talipes varus, to secure tension upon the pelvis.

1, Rubber spring. 2, Buckle for adjustment. 3, Gutta-percha investment of the foot, to the outer side of which the tension apparatus is attached. 4, Projection of the toes beyond the investment and above the application of the upper leg of the calipers, applied upon a piece of pasteboard to secure sufficient distribution of pressure. 5, Calipers showing the screw by which the squeezing of the middle portion of the gutta-percha is

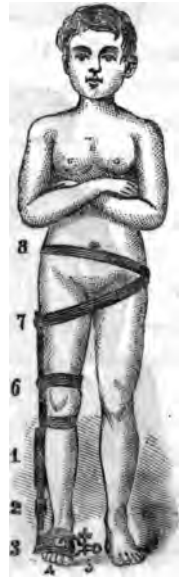

Fig. 10.

produced. 6, Knee-bands. 7, Band to which the tension cord is attached, passing obliquely across to the opposite illium. 8, Band around the pelvis to hold the other band from slipping down.

Fig. 11.

Fig. 11 illustrates the same method with an attachment above the knee. It is convenient to have a secondary fastening below the knee which is not shown in the cut.

The figures refer to the same parts as in the preceding cut. The calipers are supposed to have been removed, and the apparatus to have been fully adjusted. The whole may be inclosed in a moccasin or slipper, to enable the patient to walk about. If the patient is an infant, a stocking may be drawn over the apparatus.

Figures 12 and 13 are accurate copies of photographs of a case of talipes

Fig. 12. Before Treatment.

Fig. 13. After Treatment.

varus in a boy nine years old before treatment, and at the conclusion of treatment, at the end of the three months. The flattening down of the tarsus is more perfect than can often be secured without the vertical compression of the foot in the manner just explained. The foot appears shorter than that of the other side, because in the deformed state it had fallen behind the other in growth, but the treatment has spread the foot out effectually, so that there is no danger of a recurrence of the deformity without a nervous derangement capable of producing it from the first.

The following quotation from Barwell, p. 183, aptly illustrates the effect often produced by a theory in hampering one's natural versatility, and driving him to awkward and difficult expedients. The quotation is in explanation of the difficulty of getting room upon an infant's leg for application of plasters, in a child aged six months:

"A little more difficulty" (than usual) "had arisen from the greater adduction of the foot; this rendered it difficult to fasten on so small a thing as a child's leg and foot, the plaster representing the peroneus brevis, so that the end to which the catgut was fixed did not come against the eyelet in the tin representing the pulley. This is a difficulty which always occurs in children's cases. I find it best overcome by cutting the plaster, which is to represent the tendon of a Y shape, stretching it in the hand that it may not give way on the limb, turning down one of the ends, leaving it very short, and fastening the eyelet into it, while the other two ends are made to adhere, one on the sole and one on the dorsum of the foot, leaving the inner metatarsal bone uncovered. In these cases, also, in spite of any difficulty in knotting it, the catgut must be tied very short; the spring, too, must be as short as possible."

In this Barwell recognized, without mentioning or explaining it, the evil of that folding influence upon the foot in talipes varus, arising from pressure of the plaster upon the first metatarsal bone. To avoid this, he stops his dorsal and plantar plasters short of meeting on the tibial side of the foot.

His practical difficulties are very much increased by his theory of getting his pull from over the partially paralyzed muscles. In talipes varus, involving an elongation or loss of action of the peronei muscles, he must get his traction from over the fibula; and he is confined to the length of that bone, because these muscles have only their origins within this space.

By carrying the attachment above the knee there is found plenty of room for the rubber spring, allowing somethg for the inevitable sliding of the plaster.

By adopting the gutta-percha appliance to the foot, a firm fixture is secured equal to a hand continuously applied, which not only does not increase the abnormal transverse doubling of the foot, but helps to flatten it out, thereby much facilitating the rotation of the top or tibial margin of the foot inward or downward, and the bottom or fibular margin outward or upward.

The origin of this theory was in a correct appreciation of the philosophy of the subject, and the failure of the most complete success, grew out of too close an imitation of nature, where power is lost to gain rapidity of movement and beauty of form. In the artificial removal of deformities, rapidity is only the desire of a fool, and beauty is out of the question; while it is of the utmost importance to avoid all unnecessary pressure upon the skin to which the appliances are attached. The more direct the pull, in imitation of the hand of the operator, the lighter will be the pressure upon the skin, the less the discomfort to the patient, and the more practicable the employment of as much force as the muscles and ligaments will bear without pain in these parts.

The fundamental idea which is at the foundation of my plan of treating talipes, is the invention and application of apparatus in imitation of the action of the hand.

Iron shoes and all cumbrous inelastic and expensive machinery are thrown away. The restoration of the proper form of the foot is more likely to be the conclusion of the

treatment when the muscles, tendons, and ligaments have been elongated without division, by the slower process of growth from nutrition, than when they have been factitiously elongated by division of tendons, and the interposition of cicatriceal material, material which will gradually contract to complete disappearance. The plan here explained makes it practicable to avoid division of the tendo achillis, in cases in which it might be necessary by the old methods, even by the improved plans of Barwell.

After the treatment is complete, it is useful to steady the foot by a brace running up the side of the leg, having a joint exactly opposite the centre of motion in the ankle. The lower part is made of soft iron, so that the shape can be easily altered, and it is riveted to the sole of a common shoe by two copper rivets, the heads being placed inside the shoe.

The part above the joint, is a flat spring, conveniently made from a worn out saw. The yielding of this spring permits lateral motion at the ankle-joint, while the joint in the apparatus permits flexion and extension. At the top of the spring brace, which should reach about four-fifths of the distance from the ankle to the knee, a cross piece is fastened, made of thick tin or thin iron, of the length of half the circumference of the leg which serves, when bent to the shape of the leg, to prevent the brace from sliding backward and forward. Over the whole length of the elastic portion of the brace, above the ankle, a leather investment of the circumference of the leg and brace is adapted, which is supplied with eyelets to lace upon the opposite side. The brace is always placed upon the side from which the deviation proceeds. The pull is, therefore, from the brace, so that there can never be any chafing of the skin against it. This saves all necessity for cushioning it. The brace is always supporting the ankle-joint, and always yielding as the foot treads upon uneven ground The figures will make this description more intelligible.

Fig. 14.

In figure 14 all portions of the metal above the ankle are invested by the leather, but in the cut, they are represented as being on the outside.

This apparatus will do very well for weak ankles, but should never be trusted after treatment for talipes varus, as long as the instep is in the least too high. The foot should first, not only have the twist entirely taken out of it, but if a T. varus it should not be left in the least degree a T. dorsalis. It is entirely practicable, by the method here described, to convert it into a T. plantaris, but this is neither necessary nor desirable. After this thorough removal of the deformity, the surgeon is not likely to be afterward troubled with the case on account of a tendency to a return of the deviation unless there should be a return of the derangement of innervation, such as originally produced it.

Itmay be noted in closing, that in young infants, previous to walking, and before the infolding of the transverse diameter of the foot from the weight of the body upon its outer margin, the use of the gutta-percha clamp is not very important. The adhesive plaster investment is usually sufficient, but the use of the elastic rubber ribbon is indispensable to satisfactory progress. Where the single ribbon is too delicate, its strength can be increased by doubling. It is convenient to attach a buckle or hook at each end of the rubber ribbon, and to work the adhesive strips into them from above and below. The facility for adjustment is then complete.

In order to obviate the lateral pressure of the plaster upon the foot, a sole of leather may be first applied under the foot, made a little wider than the sole of the foot, and the strips of plaster wrapped around this and the foot combined, as is practised by Dr. H. G. Davis, of New York.

It seems to me that any case of talipes, in a patient under 15 years of age, ought to be restored; but a continuance or a

repetition of the derangement of innervation, which originally produced the deformity, may tend to reproduce it, requiring the continued use of an elastic aid to the enfeebled muscles, which may be worn inside of a boot, not differing in principle from the appliances already described, though more delicate and less bulky.

It is not supposed that perfection has yet been attained in this art, nor is it wise to be satisfied with the improvements already made, nor to believe that there is as much known about it now as there ever willbe. If, however, we could see what improvements are to come next, we should immediately make them. Experience feels out the future, but sees the past with eyes open.

Imperfect as may be our present attainments, in this branch of the great art, every child born with uncomplicated talipes, in this and subsequent decades, has that claim for complete restoration at the hands of the profession in his own vicinage, which the accessibility of the knowledge how to do it affords.

A walking specimen of talipes, born after this time, will be a disgrace to somebody, who should have known better.

MILK SICKNESS.

By E. W. BOYLES, of Clay City, Ill.

Messrs. Editors of the Journal:—

By your permission I wish to communicate a few words to the readers of the *Journal*, in regard to that disease familiarly known as *Milk Sickness*, for the purpose of eliciting some information on the subject.

It makes it appearance in the fall season at the same time that cattle have, and die with, the "Trembles," or "Slows," and is peculiar to districts of country where cattle have the aforesaid disease. The Premonitory Symptoms are a general

feeling of lassitude, with nausea, sometimes for several days, and even weeks, before the patient becomes confined to the bed. Next the symptoms are similar to those of Gastritis—frequent, almost constant vomiting, violent burning pain in the epigastrium, great thirst, everything taken into the stomach is almost immediately ejected. Pulse as a general thing thready and feeble, great muscular depression, coldness of the extremities. A thin brownish coat on the tongue, breath very offensive, the odor is so peculiar that a person having once *smelled* it, will recognize it ever after. Bowels always obstinately constipated in the early stages.

These are the most prominent symptoms as they generally appear, though they differ considerably in different cases, and there are often many others present, viz., hiccough, sometimes considerable fever is present, and a peculiar sighing, blowing noise on expiration, and by placing the palm of the hand on the bowels a thrill will be communicated at every diastole of the heart, exactly as though the hand was placed over the region of that organ. This symptom, I *believe* to be always present.

You will perceive that the symptoms are closely allied to those of Gastritis, but I have never noticed the brain being augmented by by pressure in this disease as it is in Idiopathic Gastritis. Again, the offensive odor that is always present in this disease is not present in Gastritis. And perhaps the most characteristic symptom is the obstinate constipation of the bowels in the early stages of the disease, which, though frequent, is not invariably the case in Gastritis.

Now, a few words in regard to treatment. When I first had to deal with this disease, after producing an evacuation of the bowels, I gave quinine, but my patients invariably grew worse under its use, so I have long since given that up. My plan of treatment now is, large doses of calomel combined with some powerful cathartic, often croton oil, when the stomach will retain it, but we can scarcely ever get enough medicine of any kind to remain in the stomach long enough to

produce purging, so we resort to purgative enemata. After effecting an evacuation I then keep up the use of mercury, until the patient is slightly ptyalized, or better, and I give alcoholic stimulants with an unsparing hand. It is next to impossible to intoxicate a patient laboring under this disease. I have treated twenty cases during the last fall, eighteen of which recovered. In the cases that proved fatal dysenteric diarrhœa ensued, with much griping and tenesmus.

I have seen a few patients die before any action could be obtained on the bowels.

Now, Messrs. Editors, what is it? It is a disease about which there is great contrariety of opinion. The majority of physicians in this section of country call it Congestive Fever, but it is as far from Pernicious Fever as day is from night. Milk Sickness, I am satisfied, is a misnomer, for I have treated several cases where the patient never indulged in drinking milk or eating beef or butter, because they were afraid of contracting the disease, that being the prevalent opinion of the way it is communicated. Yet it is peculiar to districts where cattle have the "trembles."

I wish to be brief as possible, so I will close this, I fear, too lengthy article. I have given the prominent symptoms as they have appeared under my observation, together with the prominent features of my mode of treatment. I, of course, use a good many other things, as subsidiary blisters to the epigastrium, etc. I would be pleased to hear from you or any of your correspondents on the subject.

COMMUNICATION.

By GEO. D. WINCH, Surgeon 42d Ill. Vols., Cairo, Ill

Y——, aged 38, weak and anemic, was brought into hospital at 9 o'clock A. M., Nov. 17th, 1864, which was the first time I saw him.

He was seized with severe pain in the head and limbs, accompanied by a chill lasting nearly two hours, yesterday afternoon. I found him complaining of severe pain in the head and limbs, vomiting everything taken into the stomach, pulse only 100 and soft, extremities warm, pupils dilated They do not contract; neither does the patient suffer by exposure to light. The tongue coated white, and the coat very thick.

Nov. 18th.—Pulse continues same as yesterday; breathing laborious and noisy; vomiting ceased; he is quite stupid. At times he arouses and then complains of the pain in the head and limbs as being non-endurable.

Nov. 19th.—Is comatose; pupils largely dilated; pulse very weak and thread-like, not over 110; extremities warm. Expired at 2 A. M., Nov. 20th, without a convulsion, or any spasmodic actions, at least none were noticed.

Examined the brain at 10 A. M. the same morning he died. The following was its appearance: Spots of coaguable lymph the size of a ten cent piece lying near and on both sides of the longitudinal fissure. The membranes were agglutinated to the substance, but were easily separated from it. The prevailing character of the surface of these spots were gorged with dark blood, and there was a considerable quantity of serous fluid in the lateral ventricles.

ILLINOIS STATE MEDICAL SOCIETY.

The regular Annual Meeting of the Illinois State Medical Society will be held in the city of Bloomington, commencing on the *first Tuesday* in May, 1865. Each local Medical Society is entitled to one delegate for every ten of its members. Each regular Medical College and each Hospital is entitled to two delegates. We hope to see a full attendance, and enjoy a profitable meeting.

N. S. DAVIS,
Permanent Secretary.

Chicago, Feb. 10th, 1865.

CHICAGO

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ORIGINAL COMMUNICATIONS.

DIPHTHERIA.

By JAMES S. WHITMIRE, M.D., of Metamora, Ill.

Editors Chicago Medical Journal:

During the months of December, January, and to this time (Feb. 19th), in the German settlement, four miles west of this place, Diphtheria has extensively prevailed, in an unusually malignant form, and from the fact that it has been nearly exclusively confined to one township, I can view it in no other light than that of an epidemic; almost all the children in that vicinity having been affected with it in a greater or less degree.

Why it should be confined to that particular locality, and not extend its ravages over a greater extent of country, is something very incomprehensible to me. There is nothing peculiar in the topography of that locality that would seem to

indicate any local influence that might be likely to produce a detoriation of the vital forces from poisonous effluvia, either from natural or artificial causes, it being high and dry, situated on the edge of the timber, and with a beautiful prairie in front, gradually descending towards the south. The timber in the rear is nearly all cleared from the surface, which is beautifully undulating, and descending to the north, forming deep ravines, where there are crystal running brooks. The fields, in front and rear, are well cultivated, and the inhabitants industrious, temperate and frugal. They are what may be called good livers generally, but probably use more pork and sour-krout as a common diet than twice their number of Americans would do. I therefore can see no appreciable cause for this terrible scourge falling upon them, excepting that of an epidemic influence, which is wholly unaccountable to me.

We have had a dry, cold winter, mercury ranging from 32° above to 10° below 0, and no rain of any amount has fallen since Nov., 1864, until the 2d and 3d of Feb., so that, all things considered, we have had one of the most even and pleasant winters that I have seen for many years.

Viewing the character of this scourge of youth, as I do, which is that of blood-poison, without stopping to enquire of what that poison consists, or the manner of its introduction into the system, whether from external influence, or whether it is engendered within, from a vitiated condition of the circulating fluid, and hence an unhealthy molecular formation of the tissues; of these things I leave for future investigations by ætiologists. My own opinion is, that the disease is engendered within, but probably more or less influenced by external influences.

Persons attacked with diphtheria, have generally complained of soreness of the pharynx, fauces, and tonsils, general langnor, lassitude, and indisposition to take food for three or four days previous to the occurrence of any febrile excitement becoming apparent. At this time on examining the

throat, an immense injection of the submucous cellular tissue, and œdema of the tonsils, soft palate, and uvula is present, not amounting to a sthenic grade of inflammation of these parts; and at this period patches of exudation of pseudo-membrane of a light straw color begin to appear, seldom covering the whole engorged part, and febrile action, with great quickness, and often frequency of pulse, is nearly always an accompaniment of this stage of the disease.

There is also more or less inflammation of the cellular tissue of the neck, about the angle of the jaw, and difficult articulation on account of the swelling, influenced more or less by the functional derangement of the cervico-spinal nervous system. The languor and weakness that occurs after the incipient stage is, no doubt, owing to the failure of the vital forces to produce the natural quantity of red globules in the blood, consequently it fails to produce a sufficient absorption of oxygen for the ordinary wants of the system, and hence the production of fibrin is lessened in quantity, and detoriated in quality, producing important molecular changes in the formation of the tissues, and necessarily follows, in consequence functional derangement of all the secretory and excretory organs, and as a consequence, there is a scanty elimination of excrementitious matter contained in the circulating fluid; and hence the fever in this disease is of a decidedly asthenic character, and the irritable, frequent pulse which always accompanies the worst form of this disease is, no doubt, owing partly to the irritation of the internal lining, or endangium of the heart and blood-vessels, in connection with the unhealthy nutrition and consequent functional derangement of the great nervous centres.

The idea is very general among the people that this is simply a local disease, and that if the throat is once cured by proper applications, the patient will necessarily recover; and for this erroneous opinion physicians are very much to blame, for instead of talking to the friends and treating them as intelligent beings, they make an unwarranted display of swabs,

caustics, pencils, and washes; look wise, and say nothing, in order to impress the family with their superior wisdom and the great and imminent danger of their patients. This is radically wrong. On the contrary everything necessary to be done should be explained in, as nearly as practicable, the most simple manner, and the prognosis of this disease should be given in all cases in the most cautious manner possible; for there is no stage in which there is not great danger from its assuming a malignant form, or that the tendency may not be to the extension of the specific inflammation into the larynx producing what is usually called pseudo-membranous croup. In observing these rules, and then in ordering medicines or a particular regimen, your directions will be more likely to be attended to intelligibly and with greater care, so that your patients will be more secure from the intermeddlings of officious people.

On account of this general impression (that of its being simply a local disease), the physician is seldom consulted until the exudation begins to appear, and the difficulty of articulation creates alarm in the minds of the friends. However, under these circumstances, I usually administer a moderate dose of castor oil in preference to any other laxative, as it has less tendency to debilitate the system than other medicines of this class. I also pencil the tonsils and throat with a solution of iodine; ℞. Tinct. Iodine, ʒij; Pot. Iod., gr. iv; Aqua, ℥j; taking great care not to interfere with or rub off the exudation, further than the solution affects it by softening and dissolving the membrane; thus imitating nature to some extent of getting rid of it, and in this respect it possesses an influence over the ordinary remedies, caustics, etc., they coagulating and hardening the exudation. Besides, the iodine acts as a local capillary tonic whenever it comes in contact with the surfaces, and enables the engorged vessels to relieve themselves of their contents, and by absorption to get rid of the œdema consequent upon the engorgement.

For the constitutional remedies I prescribe, Pot. Chloras.,

℥iv; Ammon. Mur., ℥ij; Sp'ts Nit., ℥ij; Creosote, gtt. viij; Tinct. Ferri Mur., ℥ij; Aqua, ℥iijss. Dose. One desert-spoonful in sweetened water, every four hours; this is for a child from five to eight years old. If there is great debility, I give Pulv. Dov. and Quinine. My reasons for using this mixture are plain, simple, and easily adduced, and it is eminently calculated to fill all the indications of treatment manifested in the character of the disease.

The chlorates by their solution in the blood, facilitate the absorption of oxygen; the chalybeate replenishes the diminishing red corpuscles, and, together rendering the capacity of the blood greater for the reception of Oxygen and thus rendering its more healthy constitution available in secretion, absorption and in the formation of the tissues; the creosote is a direct antiseptic, and thus with the revivification of the blood, by the absorption of oxygen, they must necessarily play an important part in the formation of more healthy tissues, and in connection with this, the great nervous centres are relieved from the depressing influence of vitiated blood, thus allowing its natural influence over the secretory and excretory functions, and establishing an equilibrium of the circulating fluid, by means of the restoration of this great central influence. The influence, also, of diet, in the treatment of this disease, is by no means to be overlooked. And it matters very little what method of treatment be adopted unless the patients are well-nourished from the beginning, the chances are that there will be a great mortality among them; hence I give a decided preference to rich animal broths, frequently given. Milk and a little cooked fruit, or roast potatoes, three times a day, to give the stimulus of distension. The stomach and vital forces being in no condition to assimilate solid food, is the reason for not allowing it any oftener.

I seldom or never pencil the fauces and tonsils with the solution of iodine more than three or four times, once a day. Instead of this I prepare a gargle, which I use as such, or pencil the tonsils or affected part, as the case may be, with

the same, four or five times a day, or oftener, if the throat is very painful. This gargle is composed of ℞. Alum Sulph., ʒj; Alcohol, ℥j; Acid Aromat. Sulph., ʒj; Creosote, Oil Cinnam., āā, gtt. xl; Treacle, ℥iij. This mixture is very stimulating to the parts, and children do not like to use it, but it has a soothing influence on the tender surface, and aids the patient materially in clearing the throat of the tenacious mucus that accumulates on the diseased surface; aside from this may not the vapor of the creosote and oil that is necessarily inhaled, exert a beneficial influence from its local stimulation of the upper air passages, in preventing the exudation of the pseudo-membrane in the larynx and trachea, which not unfrequently occurs?

So far as my limited observation goes, I am decidedly of the opinion that in this respect the influence thus exerted should not be lightly regarded, and for the purpose of availing myself of whatever beneficial influence they do exert, I direct my patients to inhale them by means of a solution in warm water, put in a wide-mouthed bottle, well-corked, and two tubes through the cork, one going nearly to the bottom of the bottle, and the one for the mouth-piece simply going through the cork. It is a cheap and simple apparatus that can be prepared with very little ingenuity in almost every house. Under this course of treatment as a standard, during this epidemic, there has been forty well-marked cases of which I have had charge. Of the whole, I have lost two cases, one being 18 months, the other 10 months old. This is a ratio of 5 per ct. But if, like many other of my professional brethren are prone to do, I should call every slight affection of the throat that I am called upon to see or prescribe for, diphtheria, then I would not lose the half of one per cent., and though very many of such cases are evidently a mild character of diphtheria, yet it is unwise to make a great "ado about nothing," and alarm the friends without benefiting the patient in the least.

Now, to conclude this already too extended article, I trust that it will not be considered inappropriate, or ostentatious in

me to give, in a concise manner, the history of a single case that occurred in the same neighborhood during the prevalence of this epidemic.

Mary Gingrich, 6 yrs. old, daughter of Christian Gingrich, whose other children, seven in number, had all had the disease, was attacked about the middle of Dec. last with diphtheria. Under the general treatment, as hereinbefore detailed, she slowly recovered, so that for two weeks she had ceased to take medicine, and played about the house.

On the 17th of January, she became so hoarse that she could not speak above a whisper, and seemed to have no other serious indisposition, so that her parents supposed it to be only a cold from which she would soon recover.

On the night of the 18th, her breathing became so difficult that her parents were much alarmed, and the child was almost uncontrollable on account of impending suffocation. As soon as daylight on the morning of the 19th they sent for me. I arrived at 10 o'clock, A. M., and found her breathing with great difficulty, the air seeming to pass through a tube not larger than a goose-quill.

On account of the prevalence of diphtheria in the neighborhood, and in the family in particular, and her recent recovery from that disease, I diagnosed at once pseudo-membranous or diphtheritic croup. I explained to the parents the imminent danger of speedy dissolution, and that there were no means of saving the child's life but to open the trachea, and even that I did not propose as a radical cure, but merely as a means that might be used for the purpose of gaining time for medication, and that the opening would render the local application of remedies more eligible.

Seeing that death was inevitable in a very few hours at most, they consented to the operation, and I, assisted by my brother and partner, Dr. J. H. Whitmire, and our students, Ray and Lamson, proceeded to open the trachea immediately below the cricoid cartilege, dividing three of the rings. There was considerable hemorrhage during the operation, both ve-

nous and arterial, the latter no doubt, coming from wounding the isthmus of the thyroid gland. We took the precaution, however, to stop the bleeding by the use of the ligature, before opening the trachea.

In order to separate the opposite sides of the wound, to admit the air more freely, we had recourse to the use of a curved needle made for the purpose, with which we took a stitch on each side, vertically under the middle ring, and fastened the thread behind the neck, which answered every purpose of free respiration. After she had become quiet, I injected the larynx from the opening, with the solution of Iodine of the same strength as before mentioned for penciling, and in doing this I used one of Dr. Warren's shower syringes which is an admirable instrument for this purpose.

On the following day, 20th, I again injected the larynx with the same solution, reduced with water one-half. On the 21st I repeated the injection, still more reduced in strength, and on account of a severe cough having set in, and a tenacious glary mucus from the bronchii, almost threatening suffocation, I determined to inject them also with the weak solution last used.

On the 22d I found her cough very much relieved, and expectoration less profuse. I now removed the threads and allowed the edges of the trachea to approximate more closely, when I perceived that she breathed more freely through the mouth. After this I used no more injections.

From the first I put her upon Mur. Tinct. Iron, Creosote, Spirits Nitre, Chlor. Pot. and Mur. Ammon. in water, with a few drops of fluid Ext. Hyosciamus. During the day Quinine in tonic doses with Dover's Powders. I enjoined the free use of chicken or beef tea as a common drink.

And now, four weeks after the operation, my little patient sits up every day, eats and drinks whatever she wants, and the wound in the neck is very near closed, so that no air escapes from it, except when she coughs, and I now consider her entirely out of danger. Now, whether my patient would

have recovered so speedily, or at all, without the use of the Iodine injections, of course must remain forever unknown, but certainly there has no apparent evil results followed its use, and I am inclined to give it a decided preference over other applications, on account of its softening or dissolving power over the exudation, as well as its peculiar action upon the engorged capillaries of the part.

EXCISION OF THE TONSIL.

By JOHN T. MYERS, M. D., Fairmount, Ills.

Miss A., aged 18, who had previously enjoyed good health, went to her bed in apparent good health, on the evening of the 13th of February and slept well until about 2 o'clock A. M., when she arose with a very severe pain in the left ear. The pain being so intense, she arose and went to the family room. On entering her mother's room, she told her mother she believed she would vomit, (spoke plainly), and, making a noise as if choking, her father sprang to her relief and found she was choking. He placed his finger in her mouth and detected a large body in the throat that seemed to obstruct the passage of air; he at once pulled it aside, and immediately sent for Dr. Ray, Dr. New and myself. On arriving, we found the right tonsil (held aside by the father) considerably enlarged and elongated, acting without due meditation; and, thinking temporary relief might be obtained, at least to suffice until daylight, I punctured the tonsil with a bistoury, but it did no good; no discharge followed the operation except a few drops of blood. We then decided that excision must be performed or death would ensue. The operation was immediately performed by Dr. Ray, (the tonsil being held by a hook,) with a probe-pointed bistoury.

The young lady was immediately relieved, or sufficiently so to sleep a little before 7 o'clock A. M. The excised portion was at least one-third larger than the egg of a pigeon. No hemorrhage followed the operation and the patient rapidly recovered, with the exception of an abscess of the left ear, which is now well and no defect of the hearing.

March 7th, 1865.

ON THE THERAPEUTIC VALUE OF NUX VOMICA IN THE TREATMENT OF ASTHENIC FORMS OF DISEASE.

By A. MIDDLEDITCH, M. D., Waterloo, Iowa.

About four years ago, I had under treatment a case of dysentery, attended by a low, slow form of fever, which, under the use of tonics and other treatment usually followed in such cases, the patient, a child about two years old, became daily worse, until it sunk into a state of extreme exhaustion, with coma and a cadaverous appearance. At this period, I asked Dr. B. to see the case with me. In his opinion, the last hope had nearly expired, and treatment useless; and I was left to act from my own resources. Prescribed Nux Vomica in doses of 1-60 gr. of the solid extract in aqueous solution every hour. After a few doses, I could begin to perceive a little change; the pulse beat fuller and slower; child less stupid, and the face less death-like. These symptoms all gradually improved and the patient recovered.

Soon after this, I was called to consult with the attending physician, in the case of a young man in the last stages of Typhoid fever. His immediately dangerous symptom was death from coma, and which was already so intense that it

was impossible to arouse him to the least consciousness. This young man had been very sick for more than two weeks, and it was very evident to my mind that this stupor, which had gradually supervened, was caused not by oppression, but by prostration of the nervous centres; and, therefore, instead of blistering, the question arose, is there not *something* which will *create* nerve force, rather than arouse an unnatural power for a few hours only, by blisters? I believed that Nux Vomica would do this, if anything could; which we gave in doses of 1-12 gr., every hour, of the solid extract. Very soon we saw that that expiring flame was being retouched with the brain's own native fire; those eyes, which a few hours before were almost in rigor mortis, began to awaken as if touched by a magic wand, and we had the satisfaction of seeing this patient recover.

The above are two examples of cases, among many, where I have used Nux with great advantage. In every disease, whatever the name, when there was reason to suppose that the nervous centres have been overcome and prostrated, indicated by coma, tremors, etc., the employment of this remedy has been attended not by any means with invariable success, but with great utility in many cases; and should I be asked with what remedy I have been most highly pleased—what have I used which has given me the greatest assurance, has disarmed the angel of death and cheated him of his victory? —I should answer, Nux Vomica.

I am anxious, therefore, to humbly submit it to the test of practitioners, in the exhaustion and prostration of the nervous centres, believing that there is no other article of the Materia Medica so potent for arousing and revivifying their lost power.

March 4th, 1865.

HOW TO PRESERVE VACCINE MATTER.

By Dr. D. PRINCE, of Jacksonville, Ills.

Take a portion of common alum (Sulph. Alumina and Potassa) and boil it upon a hot iron—a red-hot shovel is generally employed—until the water of crystalization is driven out. From this exsiccated alum, fill half-full a bottle of an ounce or two capacity; such a bottle as is usually employed for Sulphate of Morphia is convenient for the purpose. Envelope the vaccine scab in a convenient fold of paper and place in the vial over the alum. Adapt a well fitting cork, cut off even with the top of the bottle; seal air tight with good sealing wax, and set the bottle away upon a shelf.

The one indispensible requisite to the preservation of Vaccine matter is to dry it completely and keep it dry. There is probably hardly any limit to the time it may be kept perfectly fresh and susceptible, if this condition is complied with. Any other substance having a strong affinity for water like fresh-burned lime would do well, but alum, on the whole, most perfectly combines cheapness and convenience. The writer has kept Vaccine matter through two hot seasons by this method, and has acquired entire confidence in the method.

The same material may be used over from year to year by re-heating, to be sure that the vapor absorbed is thoroughly expelled. Upon this condition depends the success of the method.

For perfect safety in transmission, the bottle thus prepared should be enveloped in a tin case, which should be soldered air tight. Thus prepared, the package might be sent round the world with perfect confidence in the preservation of the virtues of the matter.

The method of enveloping the *undried* scab, or the lymph preserved upon quill points, in wax or tin foil, or sealing them in glass tubes, without drying material to absord the moisture both of the matter and of the air, is worthy of no confidence, and indeed is utterly useless.

Jacksonville, March 15, 1865.

REPORT OF AN UNUSUAL CASE.

By JOHN G. MEACHEM, M. D., of Racine, Wis.

John Rasmusen, while on a visit to Kansas, in the spring of 1859, became the subject of a severe attack of Typhoid Fever, which continued its course for a period of five weeks, and after convalescing, through careless exposure, he was again brought to his bed, and compelled to suffer three weeks more from relapse. During this second attack, he experienced more or less constant pain in the head, and was at times very delirious. He however recovered to all appearance perfectly, and so remained for several weeks. One morning he received a letter from his wife, who was then in this city, and in attempting to read it, found great difficulty. The letter was legibly written, but he could scarcely distinguish one word from another. All the symptoms of approaching amaurosis rapidly developed themselves. The air was full of floating black spots; he was unsteady in his gait; he had no confidence in stepping, for he had no appreciation of distance. In ascending a flight of stairs he would often fall forward by striking his toes against the perpendicular part of the step, instead of elevating his foot sufficiently high to place it upon the horizontal surface. His eyes looked vacant and inexpressive; the pupils were largely dilated, and he again began to

complain of cephalic pain. It was not severe, but he described it as "a pressure from within outwards." The onward march to complete amaurosis was remarkably rapid, it requiring but a few weeks to render him totally blind. He was a man possessed of more than an ordinary amount of energy and courage, and, though deprived of sight, was not content to cease his efforts to procure his own livelihood. He set about learning the art of broom making, which he succeeded in mastering in a wonderful manner, and at which business he continued until a few months prior to his decease.

In the spring of 1863, he became epileptic. His first distinct paroxysm I witnessed. It was quite severe. After it he remained unconscious for an hour. The next day he resumed his work, and, with the exception of some virtigo and a little increase of the pressure before described, he was as well as before the attack.

These epileptic paroxysms continued to recur monthly for nearly a year, after which they became more severe, with also a very marked increase of his sufferings. The pain in the head upon the right side, over the temporal bone, was complained of as being excruciatingly severe. He would often say, "I know some one is boring into my head with an auger." Not long after this character of pain began the right side of the face became paralysed, and the consequent deformity seemed more marked than usual. He was now unable to follow his usual avocation, but so determined was he to do as long as he lived, that he would send, and sometimes even go to Chicago himself, and purchase brooms by wholesale and sell them here at a little advance above the cost. Time also caused him to give this up, and he was obliged to take to his bed, which nature, however, did not require him long to keep, for, in a paroxysm of epilepsy, she relieved him forever of his sufferings. For a week before death the spine was rigidly curved forward, so that when the face was upwards the head and nates were the only bearing points. The head was also inclined to the right.

An autopsy was held twenty-four hours after death. The examination was made by Dr. J. G. Meachem, Jr., in presence of Drs. Nettleton, Wadsworth, Thompson, and myself.

On removing the aura mater, the brain presented a remarkably healthy appearance. All present remarked that they never saw a more perfect brain. A few of the pacheonian bodies were unusually developed. Two or three had embedded themselves completely in the parietal bones, and a pin could easily be pushed from their indentations through the bone. The ventricles contained more than twelve ounces of limpid serum.

Connected with the cerebellum, and lying upon the posterior surface of the central portion of the petrous portion of the temporal bone and embedded deeply in it, was a fibrous tumor of the size of a black walnut. The portion of the cerebellum giving origin to the tumor seemed a little hardened; otherwise there was no evidence whatever of disease in any part of the encephalic mass, except the effusion and an enormously enlarged foramen of Monro, which was three-quarters of an inch in diameter.

The third, as well as the lateral ventricles, was very greatly distended with serum, the pressure of which upon the optic commissare was doubtless the cause of the blindness, and the effusion must have taken place at the time, or soon after, the relapse of fever, as the result of inflammation, which was ndicated at that time by the pain in the head, delirium, etc.

It was the opinion of all the medical gentlemen present that the effusion was in no way connected with or dependent upon the presence of the tumor, as there was presented no appearance of recent inflammatory action in any part of the brain remote from the immediate vicinity of the fibrous growth. The facial paralysis was of course due to the pressure of the tumor upon the casserian ganglion, over which a portion of it lay.

CLINICAL LECTURES ON DISEASES OF THE EYE.

By E. L. HOLMES, M. D., of Chicago,
Lecturer on Diseases of the Eye and Ear in Rush Medical College, and Surgeon of the Chicago Charitable Eye and Ear Infirmary.

CHOROIDITIS.

Gentlemen :—The diseases of the Choroid, as now understood from investigations with the ophthalmoscope and microscope, may be divided into two classes: those in which an undue hardness of the globe, caused by an abnormal increase of its fluids, is a characteristic symptom; and those in which this hardness is not a characteristic symptom.

Cases of the first class, to which the term "glaucomatous" is often given, are peculiar to patients somewhat advanced in years. Although glaucoma is apparently a very rare disease at the west, its discussion involves a few very important principles, and for this reason I shall make it the special subject of the next lecture.

Diseases of the Choroid, belonging to the second class, are not unfrequent, and embrace many cases which were included, previous to the discovery of the ophthalmoscope, in the indefinite terms, amaurosis and amblyopia.

One of the most common forms of Choroiditis is intimately related with disease of the retina, and is known as retinitis pigmentosa, although Choroiditis pigmentosa would seem to be the most appropriate term. The only symptom of this disease experienced by the patient is usually, a more or less gradual loss of vision. There is generally neither pain nor any abnormal appearance, as seen by simple inspection. Occasionally the pupil will be found either oval in form or sluggish under the influence of alternate light and shade. Belladonna seems to dilate the pupil more slowly than in health. The disease is peculiar to youth and early manhood, and generally, it is stated, affects both eyes.

Upon examination with the ophthalmoscope, the lens, vit-

reous humor, and cornea are almost always found transparent. The choroid, especially its posterior portions, present peculiar changes, which are well represented in the plates of Jæger and Liebrich.

In some cases the pigment layer is, to a greater or less extent, absorbed, exposing to view, in irregular patches, the larger vessels of the choroid, which appear as quite broad, yellow lines, beautifully curved and looped together. Instead of being thus absorbed, the pigment will often be found deposited in increased quantities in irregular, jet black patches. With these appearances there are, not unfrequently, more or less extensive, thin yellow exudations. The portions of the choroid, thus affected with yellow deposit, are very often surrounded by narrow black lines of pigment. These three abnormal changes may take place in the same eye, varying in different cases, as regards their relative extent. The different shades of color and combination of forms, as seen with the ophthalmoscope, are often very beautiful.

The disease is generally, either as cause or complication, accompanied with an abnormal condition of the retina and optic nerve, as shown by changes in the retinal vessels and the papilla.

Scarcely anything is known regarding the cause of this affection. Although a few cases may be referred to a scrofulous or syphilitic condition, it does not in the majority of cases seem to depend upon any particular diathesis. A few cases have been observed in children of consanguineous parents. Too few observations have been made, however, to prove the relation of cause and effect in these cases.

The progress of the disease is usually very slow, and the prognosis as regards improvement of vision grave. Nothing of much practical value is known regarding the treatment of this disease. Everything possible should be done on the part of the patient to preserve good health and in no way to fatigue the eyes.

Another form of choroiditis generally observed in children

is characterized by the presence of an organized tissue, extending from the choroid, in the form of a tumor, which causes absorption of the vitreous humor, and finally fills the whole globe. This has been called hyperplastic inflammation of the choroid.

The symptoms, as regards pain and congestion, are very slight in some cases, and in others very marked. Vision even in the early stages of the disease, is destroyed. As the growth increases in size, it can be seen with the unassisted eye, as a glistening, yellowish white tumor behind the iris, which somewhat resembles the encephaloid tumor of the retina peculiar to children. It is not, however, malignant, and is not prone to return in the adjacent tissues when the globe has been extirpated. The diagnosis between this form of non-malignant growth and true cancerous disease is sometimes very difficult.

The tumor is composed of long spindle shaped cells, with an intercellular substance, containing blood vessels.

As the disease progresses it produces absorption of the intraocular tissues and finally terminates in atrophy, which may occur either with or without suppuration. In the majority of cases suppuration causes sloughing of the cornea and destruction of the tumor itself. Occasionally suppuration fails to produce this result, the size of the tumor and the amount of purulent discharge both increasing until the patient finally succumbs.

In cases of atrophy without pain, and sympathetic inflammation of the other eye, there is little call for treatment. But in the cases just mentioned, with exhaustive suppuration, the removal of the eye seems to be the only alternative.

Choroiditis of a more or less active form, and often tending to the formation of pus, is not unfrequently the result of several abnormal conditions, not only of the eye but of the system. The iris is almost always implicated in this form of the disease. There is pain in and around the eye varying very much, however, in intensity in different cases; congestion of the subconjunctival and conjunctival vessels; discoloration of the iris

with sluggishness and irregularity of the pupil,and very speedy loss of sight, with opacity of the internal refracting media of the eye. There is sometimes an increased hardness of the globe, although this is not a characteristic symptom of the disease.

The inflammation may arise from injuries, as from pieces of steel or percussion cap penetrating the globe, severe blows, wounds of the cornea and sclerotic. It may follow operations for cataract, either by extraction or depression. Large penetrating ulcers of the cornea, by reducing the normal intraocular pressure, may occasionally cause passive congestion of the choroid, terminating in inflammation.

The iris and choroid of one eye may become affected by sympathy when the other eye is suffering from choroiditis, especially when produced by foreign substances within the globe by a dislocated lens, or by severe injury of the ciliary bodies. Choroiditis is occasionally a complication with suppurating or gangrenous wounds of the body, with puerperal fever, typhoid fever, variola, measles. Neglected iritis, if subject to relapses, and attended with adhesions of the iris to the lens, is very liable to be accompanied with choroiditis.

The prognosis in nearly all these cases, especially if there is tendency to the formation of pus, is unfavorable. The most careful attention to diet, rest, the use of alteratives and absorbents, seem scarcely to be of any avail.

The large majority of cases require either the removal of a piece of the iris, or the section of the ciliary muscle, as proposed by Hancock. If the disease is caused by the pressure of a foreign substance in the globe, or by a dislocated lens, efforts should be made to remove them, provided they can be seen. For the purpose of saving the other eye, it is not unfrequently necessary to resort to the extirpation of the globe originally diseased. This operation is perhaps demanded whenever there are symptoms of sympathetic inflammation, as photophobia, with loss of sight, and congestion of the deeper vessels of the conjunctiva.

TO THE MEDICAL PROFESSION OF ILLINOIS.

The undersigned, Chairman of the Committee on Practical Medicine of the Illinois State Medical Society, solicits replies to the following series of questions. He would be gratified at receiving papers at large, but, where this is not convenient, succinct answers to the interrogatories here proposed would materially facilitate the purposes of the Committee and the Society. Full credit will in each case be given to respondents. Address, prior to April 20th, Dr. J. ADAMS ALLEN,

Box 4458, Chicago.

1. What is the general character of the surface of the country in your section, (rolling, level, marshy, etc.)?
2. What is the prevailing direction of the winds?
3. What is the character of the water used as beverage?
4. Are the streams sluggish or rapid?
5. Is the soil loam, clay, gravel, or sand?
6. Woodland or prairie?
7. To what extent cultivated?
8. General occupation of inhabitants?
9. What particular circumstances exist, which may have an influence on public health?
10. What are the endemic diseases?
11. What epidemic forms, the last year?
12. In what months did they occur?
13. What ages, sexes, or occupations most affected?
14. General, or confined to a particular locality?
15. Proportionate mortality?
16. Were there any peculiar symptoms, or an absence of usually observed symptoms?
17. What variation in the relative intensity of the common symptoms was noticed?
18. What peculiarities observed *post mortem*?
19. Please state the character of the season during the epi-

demic, or immediately preceding, and any other circumstance or fact which might explain its prevalence?

20. Any peculiarities of treatment confirmatory or diverse from that laid down in the text books?

CHLOROFORM.

By M. M. EATON, M. D., of Peoria, Ill.

This is one of the greatest blessings God has given to man, and if, by this short article I can attract the attention of a few of my Medical friends, and thereby influence them to use this most valuable remedy more frequently and more intelligently, I shall be doing my duty to the suffering sons and daughters of Eve.

I am well aware that there are a few timid practitioners who have sought to throw this remedy into disrepute, and there are a few careless or ignorant ones, who have partially succeeded, by means of their failures and accidents. Now I do not desire to be understood as saying that this remedy can do no injury. If this were so, then it is inert; for any good, active remedy must do injury when improperly used, or used in improper cases, or under improper circumstances. But what I do say is this, that most of the deaths that have occurred from Chloroform (so said), have been caused either from improper administration, improper circumstances, or when given to improper patients.

Now, thanks to Drs. Brainard and Miller, (who first taught me its proper administration, while under their tuition in Chicago City Hospital,) I can say, after a considerably extended practice in Surgery and Obstetrics, I have never had the least unpleasant effect from its administration, though using it almost daily the past five or six years.

1st. How should it be given?

2d. For what should it be given?

3d. To whom should it be given?

4th. What circumstances should be observed, and what precautions taken?.

It should be inhaled in such a manner as to be freely mixed with the atmosphere. Simply pour a dram or two on a napkin, and hold within an inch or two of the nostrils, directing the patient to inhale freely—use none of the patent inhaling apparatus, they are more of a nuisance than a convenience—don't be alarmed if the patient is restless and talks incoherently, but give more until he will answer no more questions, keeping your finger on the pulse to see that it beats well.

So much for its administration; and here let me say I have never met a patient that could not be pleasantly influenced by this drug if it was given in large quantities enough. Now for the second question.

It should be given when any serious surgical operation is to be performed, excepting those in the mouth or throat where there will probably be great loss of blood, as in such cases there is danger of the blood choking the patient, if he is insensible. In other cases I deem it a cruelty to refuse to our suffering patient this invaluable boon. It should be given to women in labor when much desired always, and should be given anyhow where there is present a rigid, undilatable os uteri, and consequently a protracted labor. I often have in this way secured a speedy delivery in these cases, and have never had injury to result to mother or child from its use. Before turning I would always give it, unless my patient was so low from loss of blood as to be insensible, and as a consequence the parts thoroughly relaxed. It may be given to babes and young children fearlessly, when operating for Talipes, or any other painful operation. Your patient is then entirely under your control, and can be treated more skillfully and rapidly than could otherwise be possible; and the cries of the little patient will not unstring your nerves and make you incompetent to perform your task. Operating often for Talipes, I have always used Chloroform with great pleasure and

satisfaction. For the convulsions of children, it is the most valuable remedy in the "Materia Medica." I cause the child in such cases to inhale the Chloroform till quiet sleep is induced, then sit by and watch it, and if convulsions again come on, give more Chloroform, and so continue till they disappear, then attend to the teeth, lance the gums, if necessary give a little soda, with or without calomel, as the case seems to require. This is the only treatment I have confidence in or would dare rely upon, as I have been very successful with it, and very unsuccessful with any other management.

It has gained favor with the majority of medical men that Chloroform should not ever be given to patients affected with Phthisis Pulmonalis, or Cardiac Disease. I have given it in both classes of patients without injury, and my experience in this is the same as that of Prof. Wright, of Cincinnati, related to me the past winter while visiting him. Therefore, I say it may be given to all patients requiring its use, if given properly and under proper circumstances.

What are these circumstances? First, have your patient in a recumbent posture—don't forget it. *Never give Chloroform to a patient sitting, standing, or semi-recumbent.* Dentists please note. Most of the accidents from Chloroform have been under your administration, where your patient was semi-recumbent. Always have the head nearly as low as the body. If syncope threatens, carry the head off the table or bed and hold it below the body, so as to allow the blood more readily to go to the brain and maintain life. Have the patient fast one meal before the Chloroform is to be given—much injury and annoyances often results from neglect of this precaution. If the patient is anæmic give a glass of brandy and water before the Chloroform. Have Spirits Ammonia by you, to be used if needed. Do not mix your Chloroform with Ether or anything else, if you want to be able to manage your case give *pure* Chloroform. This course has aided me materially in the little reputation I have in surgical and obstetrical practice. I hope to hear other physicians' experience with this valuable medicine.

Deaths from Chloroform.—In the *Medical Times and Gazette* of January 7th we find two more deaths from the use of chloroform reported, although special precautions were taken in administering it. The cases are published by Mr. J. Usher Huxley, House-surgeon to the Devon and Exeter Hospital. We copy the first in full, as follows:

"W. L., a healthy looking young man, aged 24, was admitted into the Devon and Exeter Hospital on Sept. 26th, suffering from a severe injury to the right foot. A heavy piece of timber falling on it had fractured the metacarpal bone of the great toe, and deeply lacerated the structures of the inner side and sole. The case went on well, and after the separation of some rather extensive sloughs, healthy granulations filled up the greater part of the chasm. The distal end of the fractured metacarpal bone, however, though evidently dead, remained fixed, and considerably hindered the progress of the wound. The man was therefore told that he must either be contented to remain in bed several weeks longer while the bone spontaneously separated, or must submit to a slight operation for its removal. He chose the latter, on condition that he might have chloroform. The heart was examined, and nothing being found to contra-indicate the employment of an anæsthetic, his wish was acceded to.

"On November 1, at 10 A. M., the patient was carried to the operating room. Two of the Hospital surgeons and the House-surgeon were present; three pupils and two nurses were also in attendance. Forty minims (measured) of chloroform were placed in a Snow's portable inhaler, and the inhalation was commenced, the external valve being at first turned aside and afterwards gradually closed. The man breathed calmly and showed no symptoms of annoyance or distress, and in about a minute began to smile, talk, and move his head slightly. The pulse, which was kept throughout, beat quite steadily for from two to three minutes, when it suddenly became imperceptible; there was no congestion or other change of the countenance, the pupils were not dilated, and the breathing was as yet quite natural; the inhaler, to which no fresh charge of chloroform had been added, was, however, immediately removed. In the course of a few seconds the respiration became deep and sobbing, and the tongue was protruded between the teeth; no return of the pulse could be felt. The only approach to spasm or convulsion was that for a few seconds the teeth were firmly clenched; this quickly passed off, and the tongue was again protruded.

The time during which the respirations continued, unaided, after the pulse had ceased, may be put down at fully a minute, and not until still later did the face become congested or the pupils dilated.

"The cold douche, ammonia, brandy, galvanism, and forceps for the tongue (as always at this Hospital) were at hand in the operating room. The first was applied directly the pulse was missed, and in the shortest space of time brandy was injected into the rectum, solution of ammonia on lint was applied to the nostrils, and galvanic shocks were passed (with due intermission) through the cardiac region, whilst friction was applied to the extremities. The forceps were not needed, as the tongue did not fall back.

"Immediately the breathing began to flag, artificial respiration by the 'Sylvester method' was commenced, and this was steadily carried on for upwards of half an hour. The galvanism was applied at intervals for a like period. No trace of reaction occurred. It should be stated that the inhaler had not been used for any other case that morning, so that it contained absolutely no chloroform but the forty minims.

"*Autopsy six hours after death.*—Body muscular, well nourished. Throax—Pericardium natural; surfaces of right pleura everywhere firmly adherent; both lungs healthy in structure, the right more congested than the left. On removing the heart (all its orifices having been previously secured), the ventricles were found firmly contracted and empty; the auricles contained some blood, the right in larger proportion. In these and in the large veins the blood was mostly, but not wholly, uncoagulated. All the valves of the heart were perfectly healthy. The muscular substance was firm, of good color, and without the slightest appearance of fatty or other degeneration. On microscopical examination, the ultimate fibres were found free from oil-globules, and striæ were well marked. The walls of the left ventricle were slightly hypertrophied without dilatation. The whole organ, washed free from blood, but with a portion of the large vessels adhering, weighed 14½ ounces. Aorta healthy; no appearance of clots in the pulmonary artery. Abdomen—Stomach moderately filled with food. Spleen natural; weight 11 ozs. Liver large, congested; weight 5 lbs. 12 ozs. Kidneys, large and much congested; weight, the right, 9¼ ozs., the left, 9¾ ozs. Both liver and kidneys were firm to the knife, and the surface of the sections looked smooth and rather glistening, so that there was no question as to albumenoid (amyloid) degenera-

tion; but there was no semi-transparent, glue-infiltrated appearance of the cut surfaces and edges, and no reaction, characteristic of the amyloid change, took place when solution of iodine was applied. Under the microscope, too, both the arteries and cells of the hepatic and renal structures appeared perfectly natural. After being allowed to remain for some hours (covered over to prevent evaporation), it was found that a quantity of blood had drained from the cut surfaces, and that the liver had assumed the ordinary size, while the kidneys were much reduced in bulk. Sections now freshly made showed perfectly natural surfaces. Head (examined last)—The brain and its membranes were perfectly healthy, and not at all congested; blood, however, had probably drained away from the divided veins of the neck. Some urine drawn off from the bladder after the examination contained a trace of albumen, and a flocculent deposit consisting solely of epithelium.

"At the inquest held on this case the jury returned a verdict of 'Homicide by misadventure,' and wholly exculpated the medical officers from blame in the matter."

This case we look upon as one of the greatest value in its bearing on the question of the possibility of employing chloroform as an anæsthetic without danger. It could have been hardly possible to take greater precautions in administering it, or to use more faithfully all the means likely to have had any efficacy in the endeavor to rescue the patient from his perilous situation; and yet death followed. The eyes of the profession in Great Britain have been gradually opening to the alarming risk inseperable from the ordinary methods of inhaling this anæsthetic, and the recent report of the chloroform committee will undoubtedly have a good effect in checking its heedless employment, and in inducing greater watchfulness in those who are willing to deal with such a fatal agent. A new inhaler has been recommended, by which a proper dilution of the vapor with fresh air is secured, and the pulse is entrusted to a special guardian during the whole process of inhalation. With such precautions it is thought this anæsthetic may be disarmed of all its dangers. Now let us look at the case before us.

First, the patient was a young, healthy subject, presenting no constitutional contra-indication, so far as could be discovered, to the use of an anæsthetic. Second, the amount of chloroform inhaled was small—only forty minims—and given with great caution from an inhaler, with a due admixture of

air with the vapor. Third, the pulse was watched from the first. And yet, without the slightest warning, without any evidence of distress or of cerebral oppression, without any faltering or weakness of the pulse to give the alarm, it instantly stopped, and did not return. Surely one who is accustomed to employ this agent may well be appalled by such an unlook-for casualty. Every known precaution taken, a fit subject for the inhalation, instant death without warning!

The case, as we have seen, is most carefully reported. The results of the autopsy are most interesting. It will be observed that the heart, *ultimum moriens* as it had been called, was found "firmly contracted and empty." This condition is very significant when considered in relation to the usually accepted explanation of chloroform deaths. Paralysis of the heart is the commonly received cause of death in these cases. The agent is thought to act with fatal rapidity by destroying the sensibility of the vital centre and thus arresting its action. It is pretty important matter to determine whether this is the true explanation of these terrible calamities, since upon it depends the theory of the treatment. It would seem, in the case before us, that death was caused by *spasm*, not paralysis, of the heart. The organ shut itself up so closely that not a drop of blood could enter it, and maintained its grip until the *rigor mortis* took its place. There were only slight signs of external spasm, the respiration was unobstructed and continued some time after the heart stopped beating, and yet it would not respond to the usual stimulus of the vital current. The blood was found to be mostly fluid. The poison had entered it and destroyed its normal properties, and the principal instrument in its distribution refused to drive it through the system. The deadly effect on the blood which chloroform produces cannot be too greatly emphasized. The mischief is most radical in its nature, and the entire suspension of the inhaling process cannot undo it in time to avert the danger. We are not aware that any investigations have been made to determine whether sulphuric ether produces any poisonous change in the blood when inhaled. Certain it is no instantaneous death has ever occurred under its use, and the symptoms which it causes diminish from the moment it is withdrawn from the patient.—*Boston Med. and Surg. Journal.*

SELECTED.

PHYSIOLOGY OF TASTING.

By Mr. NORTON FOLSOM.

When a substance to be tasted is placed in the mouth, we press it with the upper surface of the tongue against the palate, and thus force its particles in every direction. The saliva, poured in by its glands responsive to the stimulus, aids in dissolving and disseminating the particles over the mouth. When the substance reaches the fauces, and it is swallowed, a current of air escapes from the glottis, and carries any volatile portion to the posterior nares, where it is liable to affect the sense of smell. Plainly, therefore, in order to separate the two sensations, we must either shut off the cavity of the nose during the tasting, which can be done by most persons voluntarily by breathing through the mouth and applying the soft palate to the back of the pharynx, or we must interrupt the current of air through the nares, which can be done by holding the nose with the fingers.

We recognize two classes of impressions made by articles of food—one of *savors*, of which salt affords an example; the other of *flavors*, as that of vanilla. Most substances have both properties; thus a strawberry has an acid and a sweet taste, besides its own delicious flavor.

The distinction between these classes has not, indeed, been fully made by physiologists until of late; and still less has the fact been recognized, that *all flavors are perceived by the organs of smell only*, reducing the number of impressions which the organ of *taste* is capable of receiving four only, viz., Sweet, Sour, Salt and Bitter. This can, however, be easily and certainly demonstrated. Let the nose be closed by the fingers, or let the posterior nares be shut off by the soft palate, and a solution of vanilla be taken into the mouth and swallowed. It cannot be distinguished from water. Soup, nutmeg, cheese, pineapple, and asafœtida are alike entirely *flavorless* under similar conditions, though the ordinary sensibility of

the mucous membrane, and the perception of the four savors above mentioned, may enable us to comprehend certain *other* qualities which distinguish these substances. The common practice of holding a child's nose while it swallows disagreeable medicine, has its origin in this peculiar relation of these two senses.

We have now to consider the exact locality of the sensations produced by these four classes of stimuli. Experiments have been tried by various physiologists with entirely different results, which may be attributed to want of care, and to not recognizing the fact that all *flavors* should be excluded from the investigation. All agree, however, in this—that, to be tasted a substance must be brought to the sensitive part *in solution*, inasmuch as insoluble substances have no taste.

In the experiments performed by the writer, solutions of white sugar, tartaric acid, common salt, and sulphate of quinine were carefully applied to various parts of the mouth and fauces by means of a camel's hair pencil, pains being taken that no excess of fluid should be used, which might diffuse itself over other parts than that directly under observation. The following results were uniformly obtained in six different individuals, they all being unaware of the substances used in each experiment:—

1st. The upper surface, tip, and edges of the tongue, as far back as to include the circumvallate papillæ, are the only parts concerned in the sense of taste; the hard and soft palate, tonsils, pharynx, lips, gums, and under surface of the tongue being entirely destitute of this sense.

2d. The circumvallate papillæ are by far the most sensitive portion of the organ. They perceive, at once, very minute quantities of any one of the four substances used, and are particularly sensitive to bitter. Irritating these papillæ by pressure, or placing a drop of cold water on them, excites decided sensations of bitterness.

3d. The central portion of the dorsum of the tongue, to within half an inch of the edge, is the least sensitive portion. Substances are distinguished with difficulty, or not at all, when applied to it.

4th. The edges and tip of the tongue are quite sensitive, the edges becoming less so as we come forward. They recognize all the four classes of substances. The tip detects bitter with great difficulty, but is particularly sensitive to sweet. A sweet sensation, sometimes mingled with sour or salt, is produced by gently tapping it with any insipid soft substance.

The tongue possesses *ordinary sensibility*, to a marked degree, especially at its tip, and in this way detects the size, shape, and texture of substances. It is in the same way that the qualities of pungency and astringency are perceived, which fact is proved by their being nearly imperceptible to the conjunctiva.—*Am. Drug. Cir. and Chem. Gaz.*

ON THE MECHANISM OF SPEECH.

By ISAAC PIDDUCK, M. D.

To compare the mechanism of speech to that of a musical instrument, the organ, for instance: the chest is the bellows; the abdomen is the blower; the throat is the windpipe; the larynx is the reed; and, besides these, the cartilages and vocal cords are the strings; showing that the sounds of the voice are produced by the combination of a wind and a stringed instrument.

The sound formed by the larynx, (consisting of the rima or chink,) the cartilages, and the vocal cords, is divided by the tongue, the palate, the cheek, the teeth, and the lips, into letters, syllables, words, and sentences. Upon the perfect formation and healthy condition of these several parts, the strength, the rhythm, and the distinctness of the voice depend.

But to play skillfully on a musical instrument, long and careful practice is required. All persons learn to speak, as some persons learn to sing, by the ear; but very few either speak or sing correctly unless the organs of voice have been properly taught, and brought into perfect subjection by regular instruction and strict discipline. It was related of three young ladies, sisters, that they could sing, but not read aloud for any length of time, without becoming hoarse and losing their voice. They had been taught to sing, but not to speak.

By way of illustration, let us consider—

1st. The chest, or bellows. In order to speak with a loud and clear voice, so as to be heard distinctly at a distance, the capacity of the chest should be ample. This may be increased by exercise, by taking deep inspirations, and by holding the breath a short time when the chest is full, suffering the air to escape gradually by counting aloud 1, 2, 3, etc., up to 50 or 70. By this means the chest may be expanded in every direction, and its capacity greatly enlarged.

2d. The abdomen, or blower. Fullness of the abdomen is caused by eating and drinking largely, and this, again, causes flatulence, distension, or the deposition of fat, especially by the neglect of exercise; and this impedes the muscular action of the abdomen in expelling the air from the chest with sufficient force to produce a full volume of voice.

3d. The trachea, or windpipe. And 4th. The larynx. These most important parts are liable to catarrhal and nervous affections by which the voice is lost, or is rendered hoarse and discordant—*vox faucibus hæsit.* The causes which produce this injurious effect are—breathing a close, heated atmosphere, wearing warm wraps round the throat, drinking freely of hot liquids, particularly hot tea, spirit-drinking, snuff-taking and tobacco-smoking, the use of voice-lozenges, straining the voice beyond its compass, and by frequently clearing the throat. The articulate sounds, the rhythm and *timbre* of the voice, being formed by the larynx, compounded of the cartilages, the rima, or chink, and the vocal cords, and being divided by tongue applied to the palate, the teeth, and the lips into letters, syllables, words, and sentences, it is most important that all these several parts should be in a normal and healthy condition. If the tongue be too large or too small; if the palate be cleft, too arched, or too flat; if the cheeks or the lips be too largely or not fully developed, and the teeth be defective, the voice will be deficient in power, and the words will be indistinctly pronounced.

In order to attain an effective elocution, the following rules should be observed:—

1st. The speaker should stand erect, and the head not bent upon the chest, that the muscular movements of the abdomen, chest, and throat may be free and unconstrained.

2d. The chest should be fully expanded by each inspiration at the commencement of every sentence. The disregard of this rule is a frequent cause of stammering. To fill the chest and to hold out the breath to complete each sentence, the inspiration should be made through the nose. By this mode of inspiring though the nostrils, the mouth and throat are prevented from becoming dry and the voice from becoming hoarse.

3d. The pauses should be long enough for each sentence to reach its destination before it is followed by another; and, *cæteris paribus*, the slowness of the utterance should be in the ratio of the size of the room and the number of the audience.

"Learn to speak slow: all other graces,
Will follow in their proper places."

4th. Every word, if not every syllable, and almost every letter, should be distinctly enunciated, that the attention of the auditory may not be diverted from the sense to catch the sound. By this two-fold effort the attention soon grows weary and the hearer listless, and then instruction or amusement ceases.

Among the faults of extemporary speakers, lecturers, and preachers, rapidity of utterance is one of the most common. Deliberation gives time for the choice of words; and, in consequence, the speech, the lecture, or sermon is more effective, is less tedious to the hearers, and commands greater and longer attention. This rule requires self-possession, a perfect knowledge of the subject, and an earnest desire on the part of the speaker to enlighten and instruct his auditory. Rapidity of reference and of quotation may excite astonishment, but it does not impart information, which should descend upon the mind as the dew from heaven.—*Lancet.*

PROTECTION FROM SMALL POX
BY MEANS OF
VACCINATION AND RE-VACCINATION.

The resolutions found below sufficiently explains the circumstances under which the report was made, and as none can realize more fully than we do, the importance of the subject on which it treats; it gives us great pleasure to aid the committee in their laudable efforts to disseminate the facts therein contained, by placing this abridgment of their report—which nevertheless, contains all of it that is essential—before the readers of the *Journal.* The article is too meritorious to need our praise, but in one particular we regret the tendency we fear it will have, and that is the inculcation of the belief that there can be little danger of inoculating disease along with vaccine matter. On this point our observation leads us to think there is greater risk than is usually apprehended. In-

stead of saying of vaccine matter, that "*None should ever be used knowingly, except that which has been obtained from perfectly healthy persons,*" we would say that none should be used except it is *known to be from perfectly healthy persons.* Such vaccine matter only should be used as has been obtained from healthy *children* of good natural constitutions, for thereby the danger of syphilitic contamination is avoided, or greatly lessened; and except in an emergency we would advise physicians only to use such matter as they have themselves taken. If they must obtain it from others, let them take every precaution to procure such as will be most likely to prove good, and with it vaccinate a healthy child, observing its course to know that there is no erysipelatous inflammation attending it, and waiting the maturity of the scale, make use of it for general vaccination. When the unexpected appearance of small pox suddenly throws a neighborhood into a state of excitement and alarm, of course this precaution could not and should not be taken; but communities should not wait the presence of the disease, but by suitable precaution make its coming impossible. We have no doubt that disease is sometimes engrafted on the constitution through the vaccine matter, and yet with proper care, vaccination is *absolutely free from all danger.*—EDS.

At the annual session of the American Medical Association held in New York, June, 1864, the following resolutions were adopted, and the undersigned appointed a Committee to carry them out:—

"*Resolved*—that the Association deems it a duty to institute measures looking to the vaccination, ultimately, of every person living in the limits of country over which it exercises influence.

"*Resolved*—that a Central Committee of five be appointed to enlighten the public mind, by all available means, upon the value and necessity of universal vaccination.

"*Resolved*—that the Central Committee be authorized to appoint associate and auxiliary committees in each State."

According to the most reliable statistics obtainable, the annual death-rate of the United States is about one in forty-five

of the whole population, or about 600,000 annually for the last ten years. Of this number of deaths from all causes, about one in every two hundred and fifty, or in round numbers, not less than 2,500 die annually of small pox. This mortality, estimated by the usual ratio of deaths in small pox, demonstrates the existence of more than 10,000 cases of unmodified small pox annually in the United States, exclusive of varioloid; all of which can be wholly prevented by effectual vaccination and *re*-vaccination. During the great epidemics of this disease which prevailed in Europe during the early part of the present century, all observers had abundant opportunities for ascertaining the true value of vaccination. The vaccinated and those who had previously had small pox were both found to be more or less subject to the disease. Early in the progress of these epidemics, however, an important fact became evident, namely, that there was a great difference in the mortality of these three classes:—1. The vaccinated; 2. The variolated; and 3. Those who had neither been vaccinated nor had small pox. Of the first class, those who had previously been vaccinated, out of every 330 attacked, only 1 died. Of the second class, those who had previously had small pox, 1 out of every 50 died. While of the third class, those who had neither been vaccinated nor had small pox, 1 out of every 4 died Thus proving the great superiority of vaccination over small pox itself, in protecting the system from the fatality of a second attack.

Unmodified small pox is not only a very fatal disease, as proved by its frequently cutting off one-fourth of all whom it attacks, but its tendency is to develope any latent disease which may exist in the constitution, particularly scrofula, and it is thus, indirectly, the cause of death to a much larger portion of the human race than at first sight appears. It is not, therefore, surprising that small pox, attacking for the second time an already enfeebled constitution, should cause a greater proportion of deaths than takes place when it occurs after vaccination, a much milder form of the same disease, and therefore, proportionately less likely to develope any pre-existing constitutional affection.

It may, indeed, be truly said, that during the last sixty-four years, vaccination has not only prevented millions of cases of small pox, but that it has also saved a multitude of persons from scrofula and other fatal maladies.

The human race has become stronger, has produced more hardy offspring;—not only suffering less from disease in gen-

eral, but in all respects more capable of resisting it, through the instrumentality of vaccination.

Among the earliest objections urged against vaccination, even during the time of Jenner, was the alleged danger of communicating other diseases with the vaccinia. And from that day to this, cases of cutaneous disease, syphilis, scrofula, etc., have been occasionally attributed to this cause. But if it were now possible to collect all such cases, even then, their utter insignificance when compared with the multitude that have unknowingly been vaccinated with lymph taken from diseased persons, without contamination, is such, that this evidence alone against the transmissibility of other diseases by vaccination, would be sufficient to establish the conclusion as a general rule, that *there is no danger of communicating other diseases with vaccinia.* This conclusion is in keeping with the recorded experience of Heim, Ricord, Bousquet, Taupin, Landoury, Freidinger, and many others who have investigated the subject, and may, indeed, be regarded as an accepted truth by the most distinguished men of the medical profession.

The recorded facts, the arguments, and deductions made by investigators, in reference to the possibility of transmitting other diseases with vaccinia, added to the facts, positive and negative, which have been presented under our own observation, not only confirm our belief in the non-transmissibility of other diseases with the vaccinia, *as a general law*, but demonstrate that vaccination, besides preventing small pox, frequently fortifies the constitution of the individual against some of the worst of those very diseases which are erroneously alleged to be transmitted by it. We would not, however, be understood as approving the use of vaccine virus obtained from diseased persons; but, on the contrary, *none should ever be used knowingly, except that which is obtained from perfectly healthy persons.*

The protective powers of vaccination are most evident in their results to mankind in general. The comparative exemption of all civilized communities, for the last forty years, from the most terrible scourge to which mankind was ever liable, is an evidence of the protection afforded by vaccination, so overwhelming as to characterize the discovery of Jenner as the greatest boon ever conferred upon the temporal welfare of man.

In England alone, for nearly a century before the introduction of vaccination, no fewer than 30,000 persons were annually cut off by small pox; which, in the same ratio, according

to the present population, would be equivalent to 100,000 deaths annually. Out of every 1,000 deaths, from 1750 to 1800, there were 96 by small pox; from 1800 to 1850, there were but 35 in the same number.

In Germany, for the same periods of time, there were, out of every 1,000 deaths for the former period, by small pox, 66.5; for the latter period, 7.26.

In Sweden, for the last 28 years before the introduction of vaccination, out of each million of the population there were 2,050 deaths annually by small pox; for forty years subsequent to the introduction of vaccination, the number of deaths annually by small pox, per million of inhabitants, was 158.

In Westphalia, from 1776 to 1780, the annual small pox death-rate per million of inhabitants, was 2,643. From 1816 to 1850, it was 114.

In Copenhagen, 1751 to 1800, the annual rate per million, was 3,128; from 1800 to 1850, it was 286. In Berlin, for the same periods, the rates relatively, were 3,442 and 176.

American statistics, so far as known, are equally conclusive. According to a paper read by Dr. Robert Ware, before the Boston Sanitary Association, we learn that in Boston in 1721, the year in which inoculation was introduced, and when the whole population was 11,000, 5,759, or more than one half, had small pox, and of these, 844 died. In 1730 there were 4,000 cases and 200 deaths. In 1752, when the population was 15,684, there were 5,545 cases and 539 deaths. In 1764, there were 5,646 cases; in 1776, 5,292; and in 1792, 8,346. Compared with a subsequent period, after the general introduction of vaccination, and when it was in a measure compulsory, from 1815 to 1830, the mortality from small pox was only *fourteen;* from 1811 to 1839, it was but *fifty-two.*

By an approximate average death-rate by small pox per million of living population, from 1750 to 1800, and from 1800 to 1850, in various countries (collected by the Epidemiological Society of London), there were, in the former period, nearly twenty times as many deaths by small pox as there were in the latter. And besides, "one obviously beneficial result of vaccination, as regards its protective influence on the multitude, has not, we think, been appreciated or illustrated with sufficient force; namely, that the epidemic influence of small pox greatly increased during the practice of inoculation, and greatly decreased since vaccination has been adopted. Dr. Hebra, Professor of Diseases of the Skin, at Vienna, incidentally remarks, and simply alludes to the fact, that 'Epidemics

of small pox have been more rare and are less malignant since the introduction of vaccination.' But definite material for the following statements is to be found in the report of the Epidemiological Society, in illustration of our remarks:—(1.) During 91 years previous to *inoculation*, there were 65 distinct and well-marked epidemics, which is a ratio of 71.4 epidemics in 100 years. (2.) During 63 years in which *inoculation* was practised, and that to a great extent, there were 53 distinct and well-marked epidemics, which is a ratio of 84 epidemics in 100 years. (3.) During the last 50 years, in which vaccination has been practised, and inoculation been declared illegal, there have been 12 epidemics of small pox, which is a ratio of 24 epidemics in 109 years."*

According to the well-kept mortality statistics of Sweden, the *annual* small pox death-rate in that country, during the period of 1841–'50, averaged less than the *weekly* death-rate from small pox and measles during the period of 1755–'75. This important fact introduces us to an indirect benefit of vaccination, which has, until recently, been overlooked, namely, the beneficial influence of vaccination against other diseases. Drs. Greenhow and Farr, under the auspices of the General Board of Health of London, have shown that with the decline of small pox consequent on vaccination, the general death rate has greatly diminished from all causes; and that too, notwithstanding a severe and fatal epidemic of influenza and two epidemics of cholera; and under this diminution, it is especially notable that the two classes of diseases usually considered the most fatal, namely, scrofulous and low febrile affections, have diminished in a remarkable degree. The general death-rate per ten thousand of living population, during the periods of 1846–'55, was 25 per cent. less than the decennial period of 1746–'55; and 40 per cent. less than the decennial period of 1681–'90, showing a successive decline since the remoter period, from 421 to 355; and since the more recent period, from 355 to 249.

According to Dr. Farr's statistics, the average annual death-rates in London, from all causes and all ages, per ten thousand living, were:

From 1771–'80	500
1801–'10	292
1831–'35 (small pox prevailed)	320
1840–'54	248 9-10

*Medico-Chir. Review, October, 1857.

The average annual death-rates in Sweden, from all causes and all ages, per ten thousand living, were:

From 1776–'95	268
1821–'40	233
1841–'50	205

In McCulloch's Descriptive and Statistical account of the British Empire, Dr. Farr has shown that fever has progressively subsided since 1771, (at first under the influence of inoculation); "and that the *combined mortality of small pox, measles, and scarlatina is now only half as great as the mortality formerly occasioned by small pox alone.*"

According to the researches of Dr. Greenhow, previous to the introduction of vaccination, the death-rate from scrofulous diseases was five times greater than it is at the present time; and the present death-rate of pulmonary consumption, great as it is, is seven per cent. lower than it was previous to the discovery of Jenner.

M. Bosquet,* in his detail of the epidemic which prevailed at Marseilles, in 1825, states that the whole population was estimated at 40,000. Of these, 30,000 had been vaccinated; 2,000 had had small pox; 8,000 had neither been vaccinated nor had small pox. Of those vaccinated, 2,000 were seized with small pox; twenty of whom, or one for every hundred affected, died. Of those who had before had small pox, either naturally or by inoculation, twenty were attacked, and of these four died, or one for every five who took the disease. Of those who had not been vaccinated nor had small pox, 4,000 contracted it, and 1,000 died, or one in every four. By this it appears that *one-half* of the non-vaccinated, *one-fifteenth* of the vaccinated, and *one-one hundredth* of the variolated, took the disease. But such was the difference in the comparative mortality of the attack in the vaccinated and the variolated, that while the variolated part of the population were cut off in the proportion of *one* out of every 500, the vaccinated only lost *one* out of every 1,500; or, in other words, of an equal number of variolated and vaccinated cases, *three* of the variolated died from the second attack, for every *one* that died who had been previously vaccinated.

*Traitè de la Vaccine.

RE-VACCINATION.

Several governments, confident in the anti-variolous power of vaccination, and profiting by the experience gained, determined upon re-vaccination as the most likely means of getting rid of the epidemics which were desolating their armies. The effect was so salutary as to have finally banished small pox from among them. But this was not the only benefit. Knowing as we do, that small pox and cow pox are in reality the same disease, the latter being merely deprived of its virulence by having previously passed through the system of the cow, the results of these numerous re-vaccinations are of immense importance not only in confirming the identity of small pox and cow pox, but in establishing the no less important fact, that the protective power of small pox itself wears out of the system in a certain proportion of cases, as life advances, in nearly the same ratio as that of cow pox. Thus, in all these armies, a certain proportion of the men were found to have been previously vaccinated, while no inconsiderable proportion had passed through unmodified small pox. Now, if we take the susceptibility to re-vaccination as a test of liability to varioloid, or to a second attack of small pox, we have these vaccinations proving the fact that after a certain number of years, the same proportion of those who had previously had small pox become susceptible to a second attack, as those who have been vaccinated are to varioloid. So that once having passed through all the dangers of unmodified small pox, the person, at the end of twenty years, for instance, has no better security against a second attack, than the person who has been vaccinated for a corresponding length of time.

In the Wurtemburg army, of 40,000 cases collected by Dr. Heim, on re-vaccination it was found that in every hundred vaccinated after small pox, 32 succeeded, 26 were modified, and 42 failed. In every hundred re-vaccinated 34 succeeded, 25 were modified, and 41 failed.

According to the Statistical Report of the Medical Department of the English Army, from Oct., 1858, to Dec., 1859, 32,510 soldiers and recruits were vaccinated. Of this number, 4,124 bore marks of unmodified small pox; 23,924 bore good marks of vaccination; 1,901 bore doubtful marks of vaccination; and 2,561 had no marks of either vaccination or small pox.

By reducing these figures as nearly as possible to the same scale as those above given for the army of Wurtemberg, we find that of the 4,124 who had previously had small-pox, on vaccinnation, 1,473 or 35 per cent. succeeded; 799 or 19 per cent. imperfectly; and 1,842 or 44 per cent. failed. Of the 23,924 who had good marks of vaccination, on re-vaccination 8,976 or 37 per cent. took perfectly; 5,277 or 22 per cent. imperfectly; and 9,671 or 40 per cent. failed. Of the 1,901 with doubtful marks of vaccination, the number of good vesicles on re-vaccination was 777 or 40 per cent.; modified, 505 or 26 per cent.; and 616 or 32 per cent. failed. Of the 2,561 who had no evidence of protection, on vaccination, 1,362 or 53 per cent. took; 484 or 18 per cent. had modified vesicles, and 715 or 23 per cent. failed.

In the Prussian Army, in 1860, 69,096 soldiers were vaccinated. Of this number 57,325 exhibited marks, more or less perfect, of previous vaccinnation, 7,420 being distinct; 4,151 showed no marks whatever. Of the whole number, 44,193 took; 8,256 partially and 16,047 failed. These last were vaccinated again, when 5,577 proved successful, and 11,650 failed. During the year, there occurred among those who had been unsuccessfully vaccinated and others who had been successfully vaccinated in former years, one case of varioloid, but no case of small-pox. Thus, during the year 1860, out of 69,096 vaccinations, 49,777 or 72 per cent. took. In the entire army, there occurred during the year, 23 cases of varioloid, and 4 of small-pox. Of these cases, 14 of varioloid and 4 of small-pox occurred in persons who had not been re-vaccinated; 8 of varioloid, and one of small-pox, occurred among those in whom the re-vaccination failed; and the remaining 1 of varioloid, among those who had been re-vaccinated with success.

In the United States, re-vaccination has received but little attention. On the breaking out of small-pox among a crew of five hundred persons, on board a U. S. frigate, about twenty-five years ago, the late Dr. Samuel Jackson, Surgeon U. S. N., vaccinated the whole ship's company. One in six took. They had all been vaccinated or had had small-pox before. Those on whom vaccination failed, proved to be equally insusceptible to small pox, which wholly ceased from the time the re-vaccinations took effect.

Of 686 recruits vaccinated by Dr. Forry, U. S. Army,*

* American Journal Med. Sciences, April, 1842.

560 had been vaccinated before, 74 had had small-pox, and 52 had not had small-pox nor been vaccinated. Of the 560 previously vaccinated, 381 exhibited good cicatrices; 134 imperfect, and 45 had no marks at all; 196 took, including 55 which were modified. Of these 196, 109 had been previously vaccinated before the age of five years; 48 between the ages of five and ten, and 39 subsequently to the latter age. Of the whole 560 previously vacinated, 316 were vaccinated before the age of five years; 133 between the ages of five and ten, and 111 after the latter period. Hence it follows, though not as an exact result, according to Dr. Forry's limited experience, that as the ages of the great majority of these men ranged from twenty to thirty-three (the average being twenty-five), and as the ratio of successful re-vaccination is very nearly the same after each interval of age (being about one-third), the limit of the protective power of vaccination is not restricted to any precise number of years.

The only statistics of re-vaccination of the present army of the United States, we have been able to obtain, are the following, furnished by Dr. S. O. Vanderpoel, Surgeon-General of New York, to the U. S. Sanitary Commission,* from the first returns made to him in accordance with a general order:

Total number of recruits examined	9,548
Bearing marks of previous vaccination	7,765
Total vaccinated or re-vaccinated	8,095
Found to be susceptible	2,292
No. susceptible who had marks of previous vaccination	1,338

It is evident from the foregoing statistics, that no certain period of limitation can be fixed for the protective power of vaccination. It is certain, however, that its loss of power bears *some* proportion to the lapse of time, though it seems highly probable that this apparent loss of protective power is in the same ratio as the varying liability to small-pox, independent of vaccination. Dr. J. F. Marson, the experienced superintendent of the small-pox and vaccination hospital in London, states that, "but few patients under ten years of age have been received with small-pox after vaccination. After ten years, the number begins to increase considerably, and the largest number begins to increase considerably, and the largest number admitted are for the decennial period from the age of fifteen to twenty-five, and although progressively diminishing, they continue rather large up to thirty, and from

* Sanitary Commission Report, E.

thirty to thirty-five they are nearly the same as from ten to fifteen; but as in the unprotected at this period of life, the mortality is doubled, showing the cause to be probably as much or more depending on age and its concomitants as on other circumstances. In still further advanced life, the ratio of mortality will be seen to increase also, as in the unprotected state."*

According to the statistics of Professors Heim, of Stuttgart, and Retzius, of Stockholm, and Dr. Marson, of London, the liability of small-pox is found to be, as regards age, very nearly the same as the increased susceptibility to a second vaccination, or as will presently be seen, to a second attack of small-pox.

The occasional recurrence of unmodified small-pox a second time or after a previous vaccination, does not invalidate the general law, that a person who has once been properly vaccinated or has once had small-pox, in general remains protected against a subsequent attack. It is, however, a well established fact that certain individuals who have had unmodified small pox in infancy or youth, may, especially if frequently exposed to the epidemic influence of the disease, have it again in after life; and such attacks are always much more dangerous to life than small-pox after vaccination. All medical men of much experience have met with such cases. Dr. Thompson, of Edinburg, in his own practice, met with 85 cases of second attack of unmodified small-pox; and Prof. Heim, 57. It is in vain, therefore, to expect that vaccination will give greater security to the person from a subsequent attack of small-pox than small-pox itself unmodified. All that can be reasonably asked is, that vaccination shall give as good security against a subsequent attack of small-pox as if the person had passed through small-pox itself; and this, if properly performed, and with good lymph, the accumulated evidence of the last sixty years most thoroughly proves. And with this immense superiority in favor of the protective power of vaccination over unmodified small-pox, namely: that it is not contagious; does not endanger life; does not engender scrofulous disease; does not disfigure the countenance, nor cause deafness and blindness, and does not cut off one in every four to eight affected by it—with all of which small-pox is justly chargeable.

By estimating the result of the foregoing statistics (chiefly

* Returns of Epidemiological Society, London.

obtained from the returns of the Epidemiological Society of London, and more might be furnished), embracing carefully recorded and reconcilable points of observation for nearly 200,000 cases, we are justified in accepting this experience as a safe criterion by which to base an estimate for any number of cases, great or small.

The conclusions elucidated from the data given, are:

1. That vaccination is immensely protective against epidemic diseases generally, and against small-pox in particular; and against death by small-pox, the protective power of vaccination is almost perfect.

2. That of any number of persons who have had unmodified small-pox, the proportion wholly protected from a second attack at adult age, is 43 per cent., while 75 per cent. are liable to it again in some form or other.

3. That out of any number of adult persons who have good marks of vaccination, 40½ per cent. are perfectly protected, while 59½ per cent. are susceptible to varioloid, or to re vaccination to such a degree as to render their protection perfectly complete.

4. That the degree of protection afforded by previous unmodified small-pox, from a second attack, is only 2½ per cent. greater than the protection afforded by vaccination; a proportion too small to be regarded as any evidence of real difference in protective power, and reasonably attributable to spu rious or impaired vaccination from a variety of causes, such as vaccination during the progress of other diseases, injury of the vesicle or defective lymph.

That out of any number of adult persons with imperfect marks of vaccination, 23 per cent. only are protected, while 77 per cent. are liable to small-pox or varioloid.

6. The liability to varioloid after ten years of age, of persons vaccinated under three years of age; and the increased liability again from fifteen to twenty-five years of age, of persons vaccinated or re-vaccinated at from ten to fifteen years of age, demonstrates that, generally, protection by vaccination under twenty five years of age is complete for about seven years only. Subsequent to twenty-five years of age, protection is complete for a greater length of time, proportionate to the age of the individual at the time of the vaccination.

7. That during the prevalence of an epidemic of small-pox there is increased susceptibility to the disease, and the degree of protection from previous vaccination is proportion-

ately lessened. Under such circumstances, therefore, it is incumbent to re-vaccinate at intervals not exceeding five years; and in cases of certain exposure as soon as practicable thereafter, as there is abundant evidence of the protective power of vaccination and re-vaccination even as late as the fourth day after exposure to small pox.

8. Protection is known to be complete only when fresh vaccine lymph from a perfect vesicle fails to take on re-vaccination.

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Richmond, Ind.

BOOK NOTICES AND REVIEWS.

Therapeutics and Materia Medica: A Systematic Treatise on the Action and Uses of Medicinal Agents, including their Description and History. By ALFRED STILLE, M. D. Second Edition. Revised and Enlarged. In Two Volumes. From the Publishers, Blanchard & Lea, Philadelphia: through Wm. B. Keen & Co., Chicago.

The appearance of a new edition of Prof. Stille's work offers us an opportunity to commend it to the profession—though such commendation may seem superfluous—for since the appearance of the first edition, it has been so often and ably reviewed, and always with favor; it enriches the libraries of so many physicians and students, and is so familiar to all, that we might be justified in passing the advent of a new

edition over in silence. The second edition differs from the first in this, that the several articles which go to make up the treatise have been carefully revised, and while some unimportant things have been omitted, above one hundred pages of new matter have been added to the work, and the nomenclature and formulæ have been made to conform to the new edition of the Pharmacopœia. To us, the Author seems to have exhibited good judgment in devoting his attention largely to the *therapeutics* of medicines, which he has greatly illustrated by copious citations of their physiological action, leaving the minute details of the Materia Medica to be gleaned from more elementary works. What physicians in practice desire to obtain from works of this nature is, what medicines shall they select and how shall they use them for the cure of disease, and this, Stille teaches, and teaches it well.

The work is evidently prepared with great labor and care, and the Author seems eminently qualified for his task, not alone by his superior attainments, and the facility and elegance with which he expresses his ideas, but in that he appears to be uninfluenced by prejudice, and has no pet theories to cherish or defend, and withal his mind is imbued with a salutary skepticism, which prevents him from accepting an opinion simply because it has been long entertained, or that is commended alone by its novelty. There is, perhaps, no department of medical science in which the American intellect has shown more conspicuously than in this, and the recent labors of such men as Stille and Wood, in therapeutical investigations, have emancipated us, in this particular, from our dependence on foreign pens, and there is now no such treatise on Materia Medica, that is much sold or read in this country, and to be released from all external dependence, but especially in what pertains to the nobler achievements of the intellect, is a fit subject of rejoicing to every American. Again we would recommend the work to the *study* of those whose vocation it is to treat disease.

A Dictionary of Medical Science: Containing a concise Explanation of the various subjects and terms of Anatomy, Physiology, Hygiene, Therapeutics, Pharmacology, Pharmacy, Surgery, Obstetrics, Medical Jurisprudence and Dentistry. Notices of Climate, and of Mineral Waters, Formulæ for Officinal, Empirical and Diatetic preparations, with the Accentuation and Etymology of the terms, and the French and other synonyms, so as to constitute a French as well as English Medical Lexicon. By Robley Dunglison, M. D., LL D., Professor of the Institutes of Medicine, etc., in the Jefferson Medical College, of Philadelphia. Thoroughly revised and very greatly modified and augmented. Philadelphia: Blanchard & Lea. 1865.

The pages of the *Journal* have frequently contained notices of this work, and always commendatory, as the successive editions have appeared. The value of the present edition has been greatly enhanced by the introduction of new subjects and terms, and a more complete etymology and accentuation, which renders the work not only satisfactory and desirable, but indispensable, to the Physician.

For sale by W. B. Keen & Co., 146 Lake street.

The New York Medical Journal.—We hail with pleasure the appearance of a Medical Journal in the *City of New York*, a place of considerable importance, on account of the number of its inhabitants, its wealth and commercial advantages, but for some time without a Medical periodical of its own. The fact that a *Medical Journal* has now been started there we consider as praisworthy and honorable to the enterprise of our brethren in that distant city. We hope that this experiment may succeed. But seriously, judging from the mechanical execution and contents of the initial number, which is before us, it is to be in every particular worthy the Profession and the city whence it issues. "The New York Medical Journal" will be published on the first of every month, and will contain not less than 80 octavo pages in each number. Terms, five dollars a year. Address the "Editor, N. Y. Medical Journal." We wish the "Journal" all success, which is ensured by the long list of contributors, including the names of many of the ablest men in our ranks.

• *Married.*—At the residence of the bride's father, in West Northfield, Ill., Feb. 13th, 1865, by Rev. Mr. Barret, C. J. LEWIS, M. D., and ANNA M. EDWARDS.

Obituary.—Died, Dec. 8th, 1864, of double Pneumonia, with Pericarditis, after an illness of five days, William Senhouse Kirkes, M. D., Physician to St. Bartholomew's Hospital, aged 41 years. Dr. K. was well known in this country by his excellent hand-book of Physiology.

A Gold Medal to M. Nelaton.—M. Durrun, accompanied by Dr. Mangies, lately presented to Professor Nelaton a magnificent gold medal, sent by the Italians residing in Peru, as an acknowledgment for his visit to Gen. Garibaldi. The medal, which is of an unusually large size, represents on one side the features of Garibaldi, and on the other an inscription declaring for what reason the medal had been offered.

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CHICAGO

MEDICAL JOURNAL.

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ORIGINAL COMMUNICATIONS.

VALEDICTORY ADDRESS TO THE GRADUATING CLASS OF THE TWENTY-SECOND ANNUAL SESSION OF RUSH MEDICAL COLLEGE, JANUARY 25th, 1865.

By Prof. E. S. CARR, M. D.

Gentlemen of the Graduating Class:—

It becomes my duty at this time to offer you the congratulations of your teachers in medicine, upon the successful termination of your pupilage, with a few parting words of advice and earnest well-wishing for your future career.

The word physician in its derivation from the Greek *phusis*, signifies a naturalist, one skilled in the operations of nature; and was only applied among the Greeks to their most eminent philosophers and learned men; such only being consid-

ered worthy to practice the art of healing. Among them was Hippocrates, justly considered the father of medicine, who says that whatever constitutes wisdom is to be found in medicine; meaning that the physician is, and of right ought to be, skilled in all human knowledge. In later times among the Romans the word "Doctor" came into use. The word literally means a teacher, as Gamaliel, a doctor of the law, meaning a teacher of, and one learned in the law. A doctor of physic or medicine, plainly implies one learned in physics or medicine—one who comprehends nature as *a whole*—whose studies and investigations render him so intimate with her laws that he can at pleasure apply his knowledge to the healing of the sick. Cicero tells us that men never resemble the gods so much as when giving life and health to their fellowmen. Such being their character and estimation in early times, we cease to wonder that Esculapius had his temple, and Hippocrates his statue, and that all along the stream of time are memorial statues for those who have fallen in the service of humanity.

It is not my purpose to consume the brief hour allotted to me in eulogizing the profession to which all of you have testified your devotion. You have all, I doubt not, entered it as earnest co-workers with the great and good of all ages, whose ambition has been the alleviation of all human misery, and the advancement of medical science. From each of you the world has a right to expect some golden grain to be added to the treasury of knowledge. Each of you may transmit the inheritance of past ages, brightened and purified in your personal experience and thought.

"Knowledge not realized is not knowledge for us, but knowledge's shadow." I wish to speak to you to-night of the relation which the Physician *should* sustain to the age in which he lives, and the community in which he is placed as the *minister and interpreter of nature*—of the development, present position and attainments, and possibilities of medical science, that you may gain a more adequate appreciation of the demands it makes upon its votaries.

In looking upon science simply as a basis of art, we are apt to depreciate the labors of those who have advanced it solely by their pursuit of abstract truth. And yet it is to these very men, who were observing, comparing, theorizing, two thousand years ago, that modern civilization is most indebted. Commerce to-day pays her grateful tribute to those old-time students of geometry, whose calculations made her path upon the waters.

Out of the dim shadows of antiquity, let us evoke to-night some of those spirits whose remote influences are still felt, who made the epochs in which they lived historical, and bid them tell us what, through the long years of their labor, they learned of the nature and causes of life.

Clad in the flowing garments of Greece, from the ruins of the temple of Cos, the figure of *Hippocrates* first responds to to our call. "More than two thousand years ago," says the sage, "I laid the foundations of medical science; have I not written on imperishable papyrus that the human body is composed of three kinds of substances, solids, fluids and spirits,—did I not teach the multitude of my disciples that all diseases originate from an excess of the four *humours*, blood, phlegm, bile, and black bile? And for the cause of these mysteries, know you not that it is Nature, the superintending Intelligence? To look farther would awaken the displeasure of the gods."——"Yet, I looked," interrupts a nameless Alexandrian shade, "it was I who first took apart the House of Humanity, and in the body of a criminal found what Hippocrates had never dreamed of—the red and white machinery throngh which Life and Thought silently work—and bade Hierophilos my follower, count the pulsations which indicate their activity."

And now appears upon the stage a confused medley of actors. Dogmatics and Empirics, each claiming to be heralds of a great master.

"*I am Galen*," cries an advancing shade, "I united Dogmatism in reasoning, with Empiricism in practise, and sought

the mystery of life in speculations of the highest order. Do not my books contain opinions which have, for twelve centuries, governed the philosophic world?"

Next appears that great crier, *Theophrastus Bombastus Paracelsus*, whose clamours first convoked men to hear the suggestions of experience. He bears in his hand a crucible, upon which "Eureka" is written in characters of fire; he opens his lecture thus:—

"I possess two sorts of knowledge;
One—vast, shadowy, hints of the
Unbounded aim I once pursued;
The other consists of many secrets, learned
While bent on nobler prize,—perhaps
A few first principles which may conduct to much.
These last I offer to my followers here."

"I shall be glad,
If all my labours, failing of aught else,
Suffice to make an inroad, and procure
A wider range for thought, nay, they do this,
For, whatsoe'er my notions of true knowledge
And a legitimate success may be,
I am not blind to my undoubted rank
When classed with others. I precede my age,
And whoso wills, is very free to mount
My labors as a platform."

"But if my spirit fail,
My once proud spirit forsake me at the last,
Hast Thou done well by me? So do not Thou!
Crush not my mind, dear God, though I be crushed!
Hold me before the frequence of Thy seraphs
And say, 'I crushed him lest he should disturb
My law. Men must not know their strength.
Behold, weak and alone, how near he raised himself.'"

Such was Paracelsus.

As the trees of the forest bend before the mighty wind, so do the spirits cower, as with solemn step and slow, the Interpreter of nature steps upon the scene. "My name and memory I did bequeath to men's charitable speeches, to foreign nations and the next ages," he saith. And again, "I perceive that medicine hath been more labored than advanced; there hath been much iteration, but little progression. Thou, oh Hippocrates, to whom Galen and Paracelsus betake themselves

as to the shadow of an ass, thou wast a worshiper of idols, teaching that the secrets of nature are shut forever with the seal of God." "In thee, oh Galen, I do perceive a man that in his narrowness of mind forsook experience and became a vain pretender. Art thou not he who took away the infamy of ignorance and indolence in Physicians, by declaring so many diseases incurable, and defending thy incapacity by thy despair?"

"And thou, oh fanatical joiner of idols, with thy cohort of chemists beside thee, thou hast made man a pantomine! I can better endure Galen with his humours and elements, than Paracelsus adorning his dreams. Thy elders deserted experience, thou hast betrayed it, and polluted with thy vanity the truth thou mightest have unfolded."

I might continue this ideal representation of the teachers of antiquity a moment farther, bringing in the great cotemporary of Bacon, the immortal *Harvey*, and putting in his mouth the words of a living poet,

> "Life is life which generates,
> *Blood is blood which circulates,*
> And many-sided Life is One."

In so doing, I should only prove to you that the greatest importance of the past to us, is, in assisting us to determine the value of our present possessions.

Gœthe says that Bacon drew a wet sponge across the tablet of human knowledge. To realize the truth of this idea, place yourselves in thought in an early period of the Christian era, when the earth was regarded as reposing in the centre of the Universe, holding in her bosom, Man, the wonderful *Microcosm*, who with all Nature lived and was preserved through the influence of foreign planets, and we shall see how naturally, out of the physical and religious ideas of the time, arose *magic* and *astrology*. What were then considered the highest efforts of the magician tended to *separate* the Divine Element wherever it was found, sullied by opposing elements in visible nature, in order that the Divine and sustaining principle which

lay concealed in every form, might act with freedom. Thus was Alchemy no chance and arbitrary thought, but a necessary element of the prevailing physics.

All physicists, and nearly all physicians searched for the philosopher's stone and the elixir of life, because they *believed* that in the world of gross matter the divine element, when purified, would transmute the same into gold and jewels; applied to the *microcosm* it had power to restore health and prolong life.

Many of the most distinguished alchemists were physicians and among them through the darkness of the middle ages, was hidden the learning and piety of the world. They interrogated nature with a prayer upon their lips; their superstition was the *faith* of the time. And despite the blindness and darkness of the middle ages, there shines out among the alchemists, a grandeur of character, a fixedness of purpose, and a purity of life we should do well to IMITATE.

Of Bacon, as of Plato, it may be said, "When he came, a man who could see two sides of a thing was born." Those pregnant apothegms, "Man is the servant and interpreter of Nature," "the limit of human power and knowledge is in the faculties alone," renovated the fountains of thought. Men heard with joy, such words as these, "God, the Creator of the world, has endowed our souls to contain that world; he has claimed our *faith* for Himself, but the world of *matter* He has submitted to our *senses*." In the inductive method instituted by this master mind, all things seemed contained, —the profits of experiment, the pleasure of details, the grouping of facts under principles, and those sublime generalizations which we call laws of nature.

Great as are the obligations of the scientist to Bacon, he was not alone. It was for Galileo, and Bruno, and Copernicus to enfranchise the human mind completely from the dominion of superstition,—to widen the universe for the exercise of its powers—to add to the lustre of great discoveries that of the crown of martyrdom.

For it was just at this period that *the Church* began the separation of religion from science, which was unknown in earlier times. *She* felt no security in her home upon an insignificant planet, whirling wildly round its fixed but distant centre; she tested the Copernican theory by the words of the Psalmist: "The sun is as a bridegroom coming out of his chamber, and rejoiceth like a strong man to run a race." Also, "the world is established that it can not be moved;" she tested it by the unaided senses, and found it wanting. Around the funeral pyre of Giordana Bruno, the battle of science and superstition began—nor did it cease after the Reformation had torn off the swaddling clothes in which the human spirit had been wrapped for ages.

In pursuing the evolutions of medicine since the time of Bacon, we observe that, while the objects of the profession have ever remained the same, and a patient search after the cause of life, the mysterious vital principle, continued, physicians abandoned hypotheses and confined themselves more and more to a diligent examination of phenomena. Harvey and Sydenham, and Jenner and Lænnec, produced by their discoveries the most wonderful change in practice. Yet the adoption of the new method was so gradual that even Sydenham considered the "heating of patients in small pox the readiest means of expelling their vicious humors." It is a remarkable fact, says Dr. Revere, that though no class of men have been so devoted to science as the members of our profession, into none of the sciences was the inductive system admitted with such reluctance. It first entered the domain of Anatomy, Physiology, and Surgery; the discovery of the lymphatics, the investigations of Charles Bell into the anatomy and effects of the nervous system being its first fruits. The discovery of Jenner, and the invention of the stethoscope were the results of pure induction. In the general practice of the profession progress has necessarily been much slower from the greater obscurity pervading all living processes, whether healthy or morbid.

Modern medicine dates from the commencement of the 17th century. No man became a convert to the opinions of Harvey till 1695, when Malpighi and Leuwenhock experimented with the microscope, and actually discovered the blood coursing through the arteries. * * * *

Rich and varied as are the treasures which the faithful study of Nature have brought to our profession, there are still new continents to be discovereed. When we have exhausted our present domain of inquiries, Nature, like a kind mother, invites us to new fields of conquest.

> "Come wander with me, she saith,
> Into regions yet untrod;
> And read what is there to be read
> In the manuscript of God."

Only a small part of the secrets of the human constitution and the laws which govern it, are yet known to us. Life must be considered in its relations to surrounding media, nor can we thoroughly study man as an isolated object. Cuvier, Agassiz, and a host of lesser lights have wrought out the chain of his relationship to beast, bird, fish, mollusk, and moned, until all the successive steps between the highest and lowest forms seem unfolded to our view. And finally we must consider man as a religious, moral and intellectual, as well as physical being. And although the magnitude of these inquiries might almost deter us from entering upon them, all of the sciences are filling our hands with material for the work.

* * * * * * *

Medical education, and indeed all education, needs a larger infusion of positive science. Could we borrow time enough from the study of words, from barren metaphysical speculations, to learn what common sense has always dogmatically proclaimed to be of the first importance, the study of Humanity, the men of this generation might almost see the end of Charlatanry and Empiricism. The best interests of our profession demand, in addition to the regular practitioners, a trained class of special observers who may, by a rigid course

of observation and experiment, use all available instrumentalities for the advancement of medical science.

But money must furnish the sinews of education as it does of war. Is it too chimerical to hope that, ere long the "solid men of Chicago" will lay broad and deep the foundations for Hospitals, museums, lecture rooms, and laboratories for instruction and investigation, which shall make the commercial metropolis of the West the medical metropolis of the Union?

Perhaps to some of you gentlemen, my remarks upon the claims and possibilities of our profession seem extravagant. You may say, to what end does the student burn the midnight lamp, consume weary days and nights in the wards of the hospital, inhale the fumes of laboratories, when the laurels he would win by honorable toil, the honors and emoluments of the profession, are bestowed by Esculapius upon his illegitimate children. I answer that this is only a partial truth, and it has this rational explanation. The majority of men, including many of the professedly educated, know so little of the foundations of medical science, that they never rightly estimate the value of the trained and the cultured physician. Were the masses of our people as well instructed in Hygiene as they are in Mathematics, they would cease to be victims of Quackery. They would be better able to realize what an amount of faithful preparation our profession requires, and only to that class of men who are aiding its development by scientific methods, and are governed by its principles in practice, would they entrust their lives.

Your intelligent neighbor knows very well that two and two makes four. He would not think of praying that the rusted corn in his granary be changed to healthy grain; but when the hand of sickness is laid upon his child, unwisely *fed* and *clothed* from its birth, his soul goes out in passionate appeals, and he grasps in his terror the first promise of relief. God forbid that I should speak with disrespect of those upward aspirations of the soul, which in sorrow and in extancy have ascended through all time to the "Father of Spirits,"

but I wish to illustrate the truth, which should be taught in the pulpit and the school, that *God works by laws*,—that it is our business to apply the powers and faculties he has given us to the understanding of these laws, which are but the expression of *His will;* and that this, as well as obedience to them, is a moral duty.

The old Greeks were wiser than we, else had not Homer sung of Machaon, the pupil and son of Esculapias,

> "The spouse of Helen, dealing darts around,
> Had pierced *Machaon* with a deadly wound,
> In his right shoulder a broad shaft appeared
> And trembling Greece for her physician feared.
> To Nestor then Idomeneus began,
> Glory of Greece, old Nelius' valient son,
> Ascend thy chariot, haste with speed away,
> And great *Machaon* to the ships convey.
> A wise physician skilled our wounds to heal
> Is more than armies to the public weal."

Our country provides as yet no path of honor or preferment for those who serve her in camp and field with the weapons which science has forged for the preservation of life. At the call of patriotism, thousands of our noblest medical men left a lucrative professional business for the perils and discomforts of army life; and yet, whatever their services, they are forced to remain satisfied without rank, preferment, or anything but the consciousness of faithful work. Many have laid down their lives in the noblest spirit of sacrifice. They died that their country and its defenders might live. But when they fall, "glory wakes no pains for them." Out of their desolated family circles, and the profession in which they have been honored members, none know their costly sacrifice. The popular eye is caught by the glitter of arms; the popular ear is full of noisy triumphs; but deeper down in the popular *heart* lies a true worship of the heroism of such unrewarded self-devotion, as many an army surgeon's career would furnish for the chronicler of this war. Let the warrior's grave have its laurels; build high the sculptured mar-

ble over the statesman's breast, but lay the *faithful physician* under the daisies and the waiving grass, for the tears of the poor will water them, and his name be held in kind remembrance when brass and marble shall have crumbled into dust.

Gentlemen Graduates :—I have endeavored to present to you a standard of culture which contains all the elements of individual and professional greatness, and to which, I hope, you will aspire. May you each contribute largely to the sum of human knowledge, and aid in keeping up a close and vital union between medicine and general science. Be Doctors of Physic in the original and noble sense of the term, not mere dealers out of powders and pills—not as Luther called the Doctors of his time, "our Lord's cobblers,"—but skilful workmen in the laboratory of life. I need not tell you of the fearful responsibility which your difficult and laborious profession involves. It is not enough when at the bedside of the sick and suffering to say that we have done what we could. *Have we done all that could have been done?* Have we availed ourself of every fact and principle which our profession affords? If not, the pain, the agony, and perhaps the untimely death, stand justly chargeable to our account. Enter then upon your duties with an ardor that time cannot chill and a perseverance that shall overcome all obstacles. You have observed the close relation which exists between the development of the sciences and that of the material, moral and intellectual life of the race, and each of you will stand in the community where you are placed the minister and interpreter of nature. To no class of men does the popular mind turn with more entire confidence than to physicians. There are none who can so easily diffuse an interest in the attainment of scientific truth. Your daily walks and rides will give you opportunities for reading the outside of old earth's mysterious shield; in your reflective hours the mysteries of the inside will reveal itself. If you would not individually retrograde into the rear rank of the professional phalanx, you will be obliged to keep close upon the track of

modern discovery and invention, to be students always. You will find in looking over the illustrious names of those who have done most in advancing medicine, that they were all zealous, busy practitioners of the healing art. Indeed

> "No good, of worth sublime, does heaven permit,
> To light on man as on the passing air,
> The lamp of genius though by Nature lit,
> If not protected, fed and pruned with care,
> Soon dies or runs to waste with fitful glare."
> "Has immortality of name been given
> To them that idly worship hills and groves,
> And burn sweet incense to the queen of heaven?
> Did Newton learn from fancy, as it roves,
> To measure worlds, and follow where each moves?
> Or did Paul gain heaven's glory and its peace,
> By musing o'er the bright and tranquil isle of Greece?"

I may seem to you to have presented science mainly with reference to its lower, material and most obvious uses, but, I firmly believe, beyond these it has rewards for you far more satisfying and permanent. The discoveries of the past are most valuable for their invigorating effect upon the mind of the present, stimulating it to apply the powers of nature to machinery and the mechanic arts, to all the arts of peace and war, they form the groundwork of present civilization; but it is when we realize that *every well conducted examination of a limited object discovers to us a part of the laws which govern the Infinite whole*, that we are led to its higher, more ennobling relations.

The literature of the ancients, embodying their first rude glances at Nature as breathed in the Iliad, will always charm and delight us; but the development of physical science, penetrating beneath the surface of things, showing us the connexion between the laws of nature and the laws of reason, teaching us that the whole creation is but the expression of an All Comprehensive idea, has opened to us a poetry and a literature as much above that of the ancients as knowledge is above ignorance, or truth above error. The true poet is a dreamer no longer.

"Earth outgrows the mythic fancies
Sung beside her in her youth.
And those debonaire romances
Sound but dull beside the truth.
Truth is fair, shall we forego it,
Shall we sigh, right, for a wrong?
God himself is the best poet,
And the real is his song.

Think what a glorious vision was his who first beheld through the telescope, planet after planet, world beyond world, with attendant satellites and moons! What new conception of the hidden glory of minute nature was his who revealed, by the aid of the microscope, a world in every atom! The eye within the eye, beholds the nature within the nature,—sees

"The One Spirit's plastic stress
Sweep through the dull, dense world, compelling there
All new successions to the forms they wear,
Torturing the unwilling dross that checks its flight,
To its own likeness, as each mass may bear,
And bursting in its beauty and its might
From trees and beasts and men into the heaven's light."

In conclusion, Gentlemen, let me assure you that, notwithstanding the vastness of the themes which a contemplation of nature presents, they have no tendency to diminish our interests in the daily affairs of life.

He who shared the counsels of the Father at creation's birth, the *Great Physician*, when among us healed the sick and comforted the afflicted. May you, each and all, imitate his example. See to it that the poor shall never need a friend, or our country in this hour of peril an unconditional supporter. May you lessen the burden of misery and ignorance in the world, and carry with you in all your labors, hearts touched by a *Divine* and universal *Love*.

Thus may you honor the profession which this day welcomes you to its ranks.

CLINICAL LECTURES ON DISEASES OF THE EYE.

By E. L. HOLMES, M. D., of Chicago,

Lecturer on Diseases of the Eye and Ear in Rush Medical College, and Surgeon of the Chicago Charitable Eye and Ear Infirmary.

GLAUCOMA.

Gentlemen:—Glaucoma in its strict sense, as now defined by the results of comparatively recent investigations, is an inflammation of all the internal tissues of the globe, influenced if not caused by a congestion of these tissues, which is always accompanied by an abnormal hardness of the globe and a depression in the papilla of the optic nerve.

The subjective symptoms are usually pain, indistinctness of vision, and the appearance of colored rings around luminous objects. The amaurotic symptoms often commence with a diminution in the extent of the field of vision, and with a marked degree of far-sightedness. These subjective symptoms vary much in severity in different individuals. The pain for instance, may be slight, or it may be agonizing beyond description, especially in acute cases.

By simple inspection the sub-conjunctival vessels are usually found congested, the pupil dilated, although if iritis be present, it may be contracted; the iris discolored and lying nearly if not quite in contact with the cornea; later the aqueous and vitreous humors and lens become cloudy, often giving a peculiar green color to the pupil.

One of the most important objective symptoms, is the abnormal hardness of the globe, best observed by gently pressing the ends of the two fore-fingers alternately upon the closed upper lid. It is difficult to detect this hardness when there is much tenderness or swelling of the lids or conjunctiva. It will be advantageous for you to form the habit of exam-

ining normal eyes, to enable you better to detect different degrees of unnatural hardness or softness of the globe. The cornea becomes less sensitive than normal, as shown by rubbing foreign substances over its surface.

By means of the ophthalmoscope, two very important changes can be observed, before the humors of the eye have become opaque. The papilla of the optic nerve instead of being a plain disk is found to be cupped. The central vessels of the retina, especially the artery, present a peculiar pulsating motion, synchronous with the action of the heart.

Other changes which may be observed in the posterior portion of the eye are not peculiarly characteristic of glaucomatous disease. Before all these symptoms have become marked there are often certain premonitory indications of the approaching disease, such as severe headache, fugitive pains in and about the eyes, temporary congestion of the deeper conjunctival vessels, periodic attacks of dimness of vision, with the appearance of faint-colored rings around a lighted candle. This last symptom, when not dependent upon the presence of mucous on the cornea, should always place the practitioner on his guard in reference to a prognosis.

By recalling to mind a few points in the anatomy and physiology of the choroid and iris, you will readily understand the causes of these symptoms. The inflammation of the choroid, which either covers or encloses the nerves and vessels, supplying the iris and ciliary processes, interferes with the normal action of these vessels and nerves not only directly by the influence of the inflammation in the choroid itself, but also secondarily by the pressure upon them, produced by the increased contents of the globe, from serous exudation. Hence the ciliary muscle is paralyzed, and the patient cannot accommodate the eye for near objects. The ciliary branches of the fifth pair of nerves supplying the cornea, become paralyzed, and the cornea loses its sensibility. The pupil is dilated, since the circular muscular fibers of the iris become paralyzed before the radiating fibres. If the pupil is oval or irregular,

it will be found drawn towards the portion of the choroid, most seriously affected. The serous exudation just mentioned forces the lens and iris forward, sometimes obliterating the anterior chamber. For the same reason the optic nerve is forced more or less through the opening in the sclerotic, giving it the peculiar cupped appearance. The ordinary forces which cause the blood to flow in a continuous stream through the central vessels of the retina, are insufficient to carry the blood through them when pressed upon by the increased quantity of fluids in the eye. The contraction of the heart alone is able to fill the artery, hence the blood passes into the globe with a sudden pulsation.

There is a form of choroidal inflammation which merits your attention, as often causing increase of the intraocular fluids and consequent tenseness of the globe with concavity of the papilla of the optic nerve. This disease also is sometimes termed glaucomatous. It should be remembered, however, that it is an inflammation of the *choroid*, which is liable to extend to the retina and other tissues, while glaucoma is from the very beginning a congestion or inflammation of the choroid, iris and retina together.

This form of simple choroiditis is often caused by injuries, or by a syphilitic or rheumatic diathesis. There seems to be a tendency to the disease in some patients suffering from serious diseases of the heart, lungs, or liver, and in females at the period of final cessation of the menses. True glaucoma may depend in a measure upon these same causes, but there seems to be two other conditions of the eye necessary—a calcarious or atheromatous condition of the vessels of the orbit, of the base of the brain, and even of the globe itself—and a hardened, unyielding condition of the sclerotic. Comparatively recent investigations would lead us to believe that true glaucoma never occurs without a previous change in the vessels as just mentioned. Hence the disease is, like the affection of the vessels, peculiar to patients past middle life; and as the vessels of both orbits are almost invariably affected, so

glaucoma, if it attacks one eye, is almost inevitably to appear sooner or later in the other eye. The condition of the orbital vessels explains why the congestion in the globe should not be confined to the choroid, as in choroiditis.

It is worthy of notice that choroiditis with serous exudation, although it may occur in the aged, is quite common in patients below middle age. It often causes in such patients a dilatation of a portion of the sclerotic (staphyloma scleroticæ) or a general dilatation as in Hydrophthalmia, and yet the papilla may remain almost normal as regards any appearance of depression, as if this last symptom depended in a measure upon an abnormal induration of the tissue of the sclerotic. The disease may be very sudden and acute, with most violent symptoms, or it may be chronic, with symptoms so mild as scarcely to attract the patient's notice for some time. Although the symptoms may occasionally subside without treatment, they are sure to reappear. Loss of vision and atrophy of the globe are the inevitable results of the disease. Medical treatment is absolutely without permanent benefit.

Surgical interference, either in the operation of Iridectomy, as recommended by Græfe, or of section of the ciliary muscle, as proposed by Hancock, is the most reliable means now known for relieving the disease. The application of Iridectomy in the treatment of glaucomatous disease was one of the most brilliant triumphs in operative surgery. Patients suffering the most agonizing pains and totally blind, have been relieved of their pain and restored to sight. If, however, we take the aggregate experience of oculists, throughout the world, we must admit that the operation has not proved of so much benefit in so large a proportion of cases as its friends seemed at first to anticipate. The operation appears to relieve pain in a greater number of cases than it restores vision. The full benefits of the operation are mostly obtained in the earlier periods of the disease, and in acute rather than chronic cases. The operation of Iridectomy in glaucoma is similar in many respects to that for artificial pupil. It is important

that at least one-sixth of the iris be fully separated from its ciliary attachments. To accomplish this is sometimes a matter of difficulty. Two punctures through the cornea near together have been recommended as facilitating this part of the operation. When it is remembered that the iris and lens are often in direct contact with the cornea, the difficulty of performing the operation without injury to the lens will be readily appreciated.

The division of the ciliary muscle is accomplished by passing the point of a cataract knife, the back of the instrument being turned to the centre of the pupil, through the sclerotic about a line from the periphery of the cornea, till an incision has been made two or three lines in length. The edge of the lens should be avoided.

The precise manner in which these operations prove beneficial are not well understood. For different theories and for the discussion relative to the comparative utility of these two operations, I must refer you to the original works of Græfe or their translations, the later foreign journals and hand-books on Diseases of the Eye. Possibly the articles in Braithwaite of the past few years and the monograph of Dr. Keyser, of Philadelphia, would be as useful works for you to read as any you can readily obtain.

Homœopathic Globules.—Two children have been brought up at the Wisbech Police Court, charged with stealing several bottles of homœopathic medicine from the shop of Mr. Finnell. It was said in court that they had eaten the contents of more than 20 bottles without "being either better or worse for it." The children were dismissed with a reprimand. —*London Lancet.*

SELECTED.

ON THE USES OF SUGAR AND LACTIC ACID IN THE ANIMAL ECONOMY.

By SAMUEL JACKSON, M. D.,
Emeritus Professor of the Institutes of Medicine in the University of Pennsylvania.

The chemical history of the sugars has been very thoroughly worked out by the researches of the chemists. As much can not be said for its physiological actions and uses in the animal organism, or its relations with vital phenomena. On these subjects much valuable information has been obtained from the investigations of Liebig, Lehmann, and Cl. Bernard. They have not, however, so completely exhausted the facts as to render further observations unnecessary, or to cause additional suggestions to be thought obtrusive. With this view, it has appeared to me that a short review of this subject would not be inappropriate.

A brief summary of the principal chemical facts will be required in order to obtain clear ideas of the actions and uses of these bodies in animal organisms. There are several varieties of sugar marked by special characters. Chemists divide them into two kinds or species. The first division or species comprises cane sugar, beet sugar, palm sugar (produced and consumed in India), and maple sugar, with some others of less importance. They are named cane sugars, from their possessing similar chemical properties; and because the Chinese or sugar cane was the plant from which sugar was first made in China, anterior to our historical era, and at the present day nearly 90 per cent. of the sugars of commerce is furnished by various sugar canes.

The second kind or species of sugar consists of glucose or fruit sugar, which exists largely in sweet grapes, and in raisins or dried grapes, from which it has received the name of grape sugar. It is not peculiar to the grape, but is present in nearly all sweet-tasting fruit. The sugar of honey is identical

with glucose, which is also the kind of sugar found in the liver, blood, and alimentary canal of animals, and in the muscles, lungs, amniotic and allantoid fluids of the fœtus in its early stages.

The chemical reactions of the two kinds or species of sugar are in strong contrast. The cane sugars are not decomposed by pure potassa and soda; while they are transformed into sugar of the second species, or glucose, by dilute acids and heat. On the contrary, the alkalies potassa and soda decompose glucose, forming peculiar brown-colored acids; according to M. Peligot, the melassic acid. Trommer ascertained that a solution of glucose to which sulphate of potassa and copper were added and heat applied, decomposed the deutoxide of copper of the sulphate by robbing it of one equivalent of oxygen, the protoxide thus formed, being insoluble, is precipitated. This is Trommer's test for diabetic sugar in the urine. Modifications of this test have been made; that of Bareswil is convenient and reliable. It has been adopted by M. Cl. Bernard, who has named it the cupro-potassic test for sugar. M. Becquerel ascertained by experiment that the cane sugars have no actions on the deutoxide of copper, which is not reduced by them.

All the sugars proceed from the transformation of starch. The amylaceous and the saccharine groups of natural bodies are closely allied. They are nearly identical in chemical constitution, consisting of fixed equivalents of carbon (12), with slightly varying equivalents of oxygen and hydrogen in the proportions forming water—that is, from 10 starch, 11 cane sugar, 14 glucose or fruit sugar; or, in other words, they are compounds of a definite proportion of carbon with definite proportions of water. (*Payen.*) Hence their appropriate chemical name carbo-hydrates. From this sameness of composition they are readily transformed into one another. Almost any organic matter in a state of change is capable of effecting this transformation of starch.

In the seeds of the cerealia and of maize an immense store of starch is annually laid up for man and animals. Close in contact with the germ in the seed, imbedded in starch, is placed a small albuminoid substance called diastase. As long as the seeds are kept perfectly dry, even for lengthened periods of time, no action takes place; but as soon as they are exposed to moisture and heat, the diastase exerts a catalytic or fermentative action, and converts the starch into dextrine and glucose. Being very soluble, they immediately become

the organizable substance from which is formed vegetable structure. They are promptly absorbed by the germ, and under its organizing force they are transformed into cellulose, the primary organizable material from which are constructed the primary cells and vessels, and the vegetable tissues and organs.

Mialhe has shown that a similar albuminoid (nitrogenized matter) exists in the mixed saliva. Its catalytic power is so great that one part will transform two thousand of starch into glucose. Some physiologists and chemists (Bernard, Robin and Verdeil) do not admit the existence of diastase as a special organic body. They regard it as an albuminoid or nitrogenized substance, in which a change or molecular action is set up by moisture and heat. Its action, they assert, is the same as that of other animal matter in a state of change or starch. The difference, however, is in time. The action of the mixed saliva is most prompt on prepared starch. When a teaspoonful of hydrated starch is held in a sound mouth with no defective teeth, and well washed, to remove any remains of food from between the teeth, in a few seconds it becomes very fluid (dextrin), in a few more it is sweet, and, if, tested at once, sugar is found in abundance. This difference in time, in the activity of the agent, is in striking contrast with that of common organic matter in a state of change when acting on starch.

MM. Robin and Verdeil, from similar facts deny that pepsin is a special agent in the gastric juice; they regard it as organic matter in process of change, which, with an acidulated fluid, will, they assert, digest articles of animal food. A fluid of that composition will dissolve raw or cooked meat, but requires fifteen or twenty hours to effect it. Nor has it been shown that the special peptone or albuminose, the constant product and object of gastric digestion, resulted from the solution of this artificial digestive fluid. This imperfect observation can not be accepted in the face of the daily experience of healthy digestion accomplished in from three to four hours.

The conversion of starch as an aliment begins in the mouth during mastication, and if in small quantities, is there completed; but when the food is largely amylaceous, the greater portion arrives in the stomach, where the process is continued but not finished. The unchanged starch passing into the intestines, is brought under the action of pancreatin and the intestinal juice, and is rapidly transformed into glucose. When animals are fed exclusively on starch for some days, a portion

is found in the fæces unchanged; the larger part has disappeared in the intestinal canal. (*Lehmann.*)

It has been denied that starch is ever changed into glucose in the stomach, or that it can take place in the presence of an acid. (*Fremy and Boutron.*) This fact has been decided as respects the human stomach, by the experiments of Grunewald and Schroeder, who had under their charge a woman with a gastric fistula produced by a wound. They were communicated to M. Longet by M. Shiff, who witnessed the experiment. "Some ounces of hydrated starch were introduced into the stomach through the fistulous opening while fasting. Immediately after some starch was expelled, which was found already to contain sugar. In a quarter of an hour sugar was found abundantly in the stomach, and the whole of the starch was fluid (dextrin)."*

M. Bidder asserts that the power of changing starch into sugar in the stomach persists in the presence of free acids; and M. Ernst Schroeder states that the saliva possesses its activity in the stomach, and rapidly transformed swelled starch (turgefactum amylum) into sugar.†

This error arose from making the experiment on dogs, in which starch is very imperfectly changed, if at all, by their saliva. Starch does not enter into the natural food of that animal, and it appears as though no provision was made by nature for an office not intended in the natural state. If this view be correct, it is confirmative of the theory that there is a special agent, diastase, in the salivary fluid. Longet expressly objects to the using of these animals in this investigation; he alleges that their saliva has a very low transforming power, and their gastric juice is very acid.

The experiments of Lehmann, Bernard, Longet, Corvisart, and others, have established the facts of the transforming power of the pancreatic and intestinal juices, and that dextrin and glucose are the common products into which all the amylaceous and saccharine substances in food are converted in the alimentary canal. Glucose must, then, be regarded as the *proper physiological sugar.* Bernard has proved its exis tence in the earliest stages of fœtal development, before the formation of the liver, after which it is chiefly developed in that organ. He detected it in the fluids of the amnios and the allantoid.‡ In seeking for the origin of this sugar, or the

*Longet, Traite de Physiologie, vol ii, p. 174. †Ib., *loc. cit.*

‡ Leçons de Physiologie, vol. i. Leçon, xxi.

glycogenic matter which produced it, he observed in the placentas of rabbits and guinea-pigs a whitish substance formed of a mass of cellules filled with sugar-forming substance. These last resembled in this respect the liver-cells of the adult animal. In pursuing this investigation, M. Bernard ascertained that similar epithelial or glandular cellules existed in the placentas of mammifers in the first periods of embryonic life, producing a sugar-forming substance. This anatomical element of the placenta, in some animals of this class, is mingled with the vascular portion of the organ, but in the ruminants it is separated in the form of epithelial layers on the amnioas. In this manner, as Bernard had previously asserted, the fact is established that the production of an amylaceous sugar-making matter is a function common to animals and vegetables. The provision of transitory structure for producing dextrin and glucose in the earliest stage of the embryon, proves its importance in the nutritive actions and the organizing processes. They appear to be constituent principles of the organizable matter from which organized structures are formed.* In extending his researches, he discovered the same kind of cellules containing sugar-making substance to be diffused in certain tissues in this stage of embryonic development. M. Cl. Bernard gives a full and very clear exposition of the experiments by which he ascertained the above fact. As these are not material in this discussion, I refer those who would wish to see the details to the original memoir, and limit myself to little more than a mere sketch of the results he obtained. 1. The tissue of the skin is infiltrated with the glycogenic matter, which is contained also in the cells of the epithelium, as demonstrated by the microscope. Obtained a decoction of the skin, it manifested its essential character by being changed into sugar by the action of strong acids and under the influence of animal or vegetable diastase. It possessed all the properties belonging to the glycogenic matter of the liver and placenta. It is found also in the corneous appendages of the skin, as hoofs, claws, etc.; it disappears as they become hard and organized. 2. The glycogenic cellules are readily demonstrated in embryons on the whole of the mucous membranes of the alimentary canal, from the mouth and tongue to the end of the large intestines; they are seated in the epithelium which covers the villosities. They also exist in the glandular ducts

* Comptes Rendus de l'Acad. des Sci., vol. xlviii. pp. 77-86.

opening on the mucous membranes. 3. The same cellules are present in the mucous membrane of the bronchial tubes and of the nostrils. These cellules disappear, existing only during a limited period of embryonic existence; notwithstanding, the sugar-making matter remains diffused through the other portions of the pulmonary structure, and remains persistent until birth, as is shown by means of a decoction of the lung, in which it can be detected. 4. In the genito-urinary mucous membranes the same cellules are present during their evolution; they were found in the uterus, Fallopian tubes, bladder, ureters and canaliculæ of the kidneys.

In the above instances the glycogenic cells and substance were observed existing the first stages of development. They are only temporary; and as soon as the permanent epithelia are formed, then they disappear.

5. The muscles in the earliest state of development are preceded by embryonic cells in which no sugar-making substance can be detected by the microscope or by chemical reactions. But at a later period, when the histological elements appear, the glycogenic matter is perceived interposed between the nuclei, and gives its characteristic color on the application of the reagents employed. When the muscular fibre has acquired its development, the glycogenic matter then appears to be infiltrated in the substance of the fibre.

The smooth muscles contain the sugar-making substance, like the striated; it can not, however, easily be detected by the microscope; but when a decoction is prepared from them, then it is found in great abundance, as it is when the striated are treated in the same manner.

The sugar-making substance is persistent in the muscles during the whole period of intra-uterine life, but disappears rapidly after birth.

It is a remarkable fact that the glycogenic matter in the fœtus does not exist in the nervous or osseous systems, or in the glands, appendages to the alimentary canal, as the salivary glands, pancreas, (except in the epithelia of their ducts,) and the glands of Lieberkuhn, the spleen, and lymphatic ganglions.

The liver does not manifest any signs of the presence of saccharine matters until the middle of uterine life. At this time it has acquired its histological structure, and then commence its functions by the formation of bile and the existence in it of glycogenic matter. As the liver enters into functional activity, the glycogenic cellules and matters disappear

from the placenta, its envelopes, and the tissues that have been mentioned. Being a temporary organization and provisional function, at birth they have ceased to exist, and the liver enters on its permanent duties in the animal economy, lasting through life in its normal states.*

The preceding facts worked out by M. Cl. Bernard prove that in the first stage of the organic or nutritive actions, in animals as in vegetables, formative of plastic matter and organic forms, glucose is an indispensable agent. The organic, nutritive, and, as they may truly be named, vital actions, are identical in normal states through all the stages of existence, though, like all the functions, they are liable to be disturbed and perverted by various accidental influences. Yet the same law that presides over them in the embryonic state is persistent to the last span of life. It must be inferred from these facts that glucose is a physiological element in the vital or nutritive actions.

That nature, in milk, the food destined to nourish the young of the great class of mammalia, has made sugar a constituent is a significant fact pointing to the same conclusion. Sugar of milk, in chemical properties, belongs to the first species, or cane sugars, and is convertible into glucose. (*Lehmann.*)

The liver holds a prominent position in the physiological history of sugar. The immediate connection of this organ with the presence of sugar in the animal organism is the great discovery of M. Cl. Bernard. He established as a primary fact that the introduction of saccharine matters into the liver by the portal circulation was incidental and intermittent, while the presence of glycogenic matter was persistent, and sugar was always to be found in the blood of the hepatic veins issuing from the liver. The proportion constantly supplied to the organism in this way was 1 to 1.50. When it exceeds 3 of dried blood, it appears in the urine. These facts have been verified by all the prominent physiologists of Europe. Subsequently, M. Cl. Bernard completed this investigation by proving—first, that the glycogenic substance belonged to the liver; that the sugar may be completely washed out of that organ, removed from the body, and be again reproduced after a few hours; and second, by procuring it in a purified state, entirely isolated from the liver and all animal structure. Obtained in this state, it presented all the physical

*Comptes Rendus de l'Acad. des Sci., vol. lviii, pp. 673-684.

and chemical characters of starch and dextrin.* M. Biot tested it in his polariscope, and found a decided rotatory action to the right. An experiment of M. Pelouze is quite conclusive. He treated one gramme of this purified glycogene with fuming nitric acid, and obtained by the process xyloidine or gun-cotton, similar to that procured from vegetable starch. It was very combustible, and detonated at 180° C. It was converted also into oxalic acid, and by analysis gave a chemical composition that corresponded with the formula $C_{12}H_{10}O_{10}$. This glycogenic substance of the liver is transformed in the manner of starch into glucose, by an animal diastase existing in the liver and blood. There are numerous interesting facts connected with the glucogenic function of the liver, but which are omitted as irrelevent to my present object, which is to prove the importance of glucose and lactic acid in the organism as essential agents in organic or nutritive actions.

This view might have been taken from an *a priori* deduction. The immense amount of sugar and starch that enter into the food of man and animals, all of which are converted into glucose in the alimentary canal, are a strong indication of its necessity in sustaining vital activity. Dr. Stolle, some years since, estimated the cane sugars produced and consumed as food at 5,145 millions of pounds per annum.† Since then the cultivation of sugar has been extended, and the sorghum has been introduced into this country and Europe, the syrup of which is largely consumed. To this must be added the great amount of starch that forms so large a portion of vegetable food, together with fruits rich in glucose, as grapes, raisins, dates, figs, bananas, and other tropical productions, and the actual sum of glucose used up yearly in animal organisms will be found little short of double the above estimate. The extent of the cultivation, production, and consumption of the numerous substances for this one object, discloses an instinctive want essential to perfect animal existence, and to supply which nature has made ample provision. Although the exterior resources are so abundant, yet nature, in her foresight, has guarded against the many accidents that, in the eventful lives of man and animals, subject them to the total or partial want of vegetable food, has endowed the liver with its glucogenic function, by which the organism is sup-

* Comptes Rendus, vol. xliv. p. 578.
† Johnson's Chemistry of Common Life, vol. i. p. 224.

plied with glucose. In animals that die of starvation, this office is continued until about the third day before death. Life is protracted, and opportunity given for the intervention of new changes or more favorable events

Having shown the physiological position and importance of glucose in animal organisms, the next step is to follow it in its changes to its termination. A characteristic of glucose is its little stability, less than that of any other member of its group, which adapts it to its special offices in the economy. It disappears from the alimentary canal and the blood, as has been previously stated, while cane sugar, injected into a jugular vein, reappears unchanged in the urine.

In healthy conditions, glucose never accumulates in the blood or is found in any of the secretions, though it is introduced into the circulation without intermission from the liver or the alimentary canal, or both. It must, therefore, either be destroyed or transformed into some other constituent. In certain conditions, not properly ascertained, the reverse takes place, and the blood and whole organism are charged with glucose, and the urine is loaded with it, forming diabetes mellitus. What those conditions are has not been clearly determined. In fatal cases of yellow fever the liver possesses a light ochre color, and, from a limited number of examinations appears overloaded with an amyloid substance, with an entire absence of sugar. A somewhat similar state, but in less degree, it is said, occurs in fatal cases of bilious and intermittent fevers during the paroxysms. It would be an interesting inquiry to examine the liver in this point of view in all malignant forms of fever.

The conversion of cane sugars and amyloid matters of food into glucose is effected in the alimentary canal. In some animals, as dogs, this change does not take place in the stomach as proved by Bernard, but is promptly effected in the duodenum by the pancreatic fluid. In the human subject, hydrated starch is rapidly converted into dextrin and glucose, absorption of which takes place to a certain extent. That absorption of these products occurs, is rendered highly probable by the fact ascertained by Bernard, that cane sugar introduced largely into the stomachs of animals, is detected unchanged in the portal blood. A portion is also changed into lactic acid. This is admitted by both Lehmann and Bernard, who state that lactic acid is often formed in the stomach from glucose by the disturbing action arising from the digestion of the albuminous matter of the food.

Glucose is spread somewhat rapidly throughout the intestinal canal, being found in the cæcum often in an hour after its entrance. It exists as a thin, sometimes clear solution. It disappears in varying times, by two processes—conversion into lactic acid and by absorption. Diversities of opinion prevail on these points, but I follow chiefly Bernard and Lehmann as my authorities. After an abundant meal of saccharine or farinaceous substances the small intestines are decidedly acid; strongest in the duodenum, and feebler in the ileum. Lehmann asserts that this free acid "is lactic acid, according to direct experiments." Butyric acid is often found in the cæcum and colon. The absorption of glucose is rendered apparent from its rapid increase in the blood after a full meal of amylaceous or saccharine food (*Lehmann*).

The diffusive power of glucose is feeble, and its endosmotic equivalent low; hence its absorption is slow, and varies with the strength of its solution. This fact may explain why it is so seldom found in the portal blood, from the difficulty of detecting it in small quantities in that heterogeneous fluid. The whole of the glucose coming from the exterior, the representative of the amylaceous and saccharine food is disposed of in this way by conversion into lactic acid, and absorption into the circulating fluid.

The final destination of the interior supply of glucose, poured in a continuous stream from the heart into the general circulation in normal states of animal existence, can have but one solution. Glucose can not continue to exist under the influence of oxygen, heat and moisture, and in the midst of the unceasing conflicts of chemical atoms in the blood, and is transformed into lactic acid. Thus the final object of the vast provision of amylum and sugars in nature is to procure a constant supply of lactic acid, which thus appears indispensable in supporting vital activity in animal organisms.

This conclusion leads to a second inquiry, as to the uses of the lactic acid. Lehmann, in his *Manual of Chemical Physiology*, says "the physiological importance of lactic acid must not be too lightly esteemed."* It is so constantly present in the animal economy, that it may be looked on as one of its constituents. The subject has not been thoroughly handled. Liebig quotes the question, "What purposes does lactic acid serve in the organism?" and says it is of peculiar importance.† He does not solve it. His conclusion is that it

* Morris' translation, p. 78. † On the Chemistry of Food, p. 101.

is employed to support the respiratory process.* Lehmann and Bernard have gone more fully into the discussion. Their views are from different stand-points, and are, of course, dissimilar, but are not incompatible, and may be each adopted. Lehmann's view is purely chemical and physical, Bernard's is physiological. They are presented in the following brief summary:

1. The acid of the gastric juice has long been an unsettled physiological problem. Lehmann states "it (lactic acid) is the actual cause, with hydrochloric acid, of the digestive power of the gastric juice."† It is certain that no other acids can take their place in an artificial gastric juice. Bernard, from numerous experiments, concludes that lactic is the natural acid of the gastric juice; and Liebig, from Lehmann's own experiments, by correcting an error, decides, "in that case the gastric juice contains lactic acid."‡

2. In the intestinal canal, during digestion of mixed food, albumen and gelatin peptones, the products of the digestion of animal food, become acidulated by the free lactic acid with which they are mixed. According to Graham, acid bodies possess great diffusibility; and Jolly has proved that alkaline bodies have a low diffusive power, but are strongly osmotic. Hence the acidulous digested peptones separated from the alkaline blood in the capillaries of the mucous membrane are rapidly transferred into the circulation by the active endosmose excited in this manner.

3. The lactic acid, by the same physical properties and by the above process by which it promotes the introduction of nutritive materials into the organism, effects the elimination of effete and recremental matters out of the system. This action is most marked in the muscular system, which forms the chief mass of the higher animals. The muscles are strongly imbued with a special fluid (the muscular juice), contained in the interior of the fibrillæ. We are indebted to Liebig for a full knowledge of this fluid. It consists of the effete substances creatin, creatinin, and inosic acid, with alkaline salts held in solution by an acid fluid. Lactic and phosphoric acids, and acid lactates and phosphates, cause its acidity, of which lactic acid is the most important. The elements of active endosmose are here present: an alkaline albuminous fluid in the fine capillaries on one side, and an acidulous fluid in the other, sepa-

* On the Chemistry of Food, p. 103.
† Lehmann's Manual of Chemical Physiology, Morris' translation.
‡ Chemistry of Food, p. 138.

rated by little more than basement membrane must cause a constant flow of the muscular juice into the blood, in which the above effete matters are found to exist, which are rejected by the kidneys, and again met with in the urine, except the inosic acid, decomposed in the circulation. Liebig denies the constant presence of lactic acid or lactates in the urine. He relates an experiment made with "three persons who took a quantity of lactate of potash sufficient to have yielded an ounce of lactate of zinc. Before the experiment the urine had an acid reaction; immediately after it was alkaline, and the potash was detected in it, exceeding in quantity that in ordinary urine. The lactic acid could not be detected in it; it had disappeared in its passage through the blood." Lehmann concludes from* this ready combustibility of its alkaline salts that lactic acid becomes an important assistant in maintaining the animal temperature. This is true, but not more so than any other of the thousands of never-ceasing oxidations going on during life throughout the whole organism, each one contributing its mite, its minimum degree of heat. By this method nature secures the remarkable equilibrium of animal heat indispensable to health and existence.

4. The views of M. Cl. Bernard are almost entirely physiological. He lays down a proposition, or it may be termed a law, which, it appears to me, must be admitted as the expression of an important truth. It is, that whenever vital phenomena are manifested in acts of organization, two circumstances are to be kept in view: the first is the being, form or tissue in a state or process of development; and the next is the organizable matter or medium in and from which the development is taking place. The first will be passed by, as not of moment at this time, and I proceed to the second, in which will be found the examples of the principles it is attempted to establish.

Organic cells or tissues, when in the act of nutrition or development, must call incessantly on the medium of organizable matter that surrounds or bathes them for the materials of their organic composition. Two conditions are required in the organizable matter to adapt it for that purpose: instability of its chemical combinations, and an extreme mobility of the organic molecules, the preordained arrangement of which gives origin to specific cells and tissues. These are the primary and essential phenomena of life, and enable the organic chemical elements to be grouped and disposed of uninterruptedly in

*On the Chemistry of Food. J. Liebig. p. 102.

thousands of modes under germ action. Animal and vegetable cells and tissues can be developed only from a plastic matter in which the organic chemical elements and the organic molecules are prevented from falling into a fixed or statical condition, in which consists the chemical and molecular stability, the characteristic of dead and inorganic matter. Dry gangrene and local embolism may be cited as examples.

This unceasing play of the chemical elements and of molecular activity, so essential to all the vital phenomena of germ development, assimilation, nutrition, secretion, etc., are effected by chemical and physical causes and agents coming from the exterior. Of these the most active and powerful is oxygen; next in power and energy is lactic acid, not glucose. The mere conversion, new arrangement of its chemical atoms, could give no impulse to molecular and chemical disturbance in other bodies, even in contact. But lactic acid, as soon as formed, seizes on the alkalies, converts them into lactates, "which are destroyed as fast as they are produced." (*Liebig.*) In this instance we are presented with the extraordinary phenomenon, persistent through life, of the production of a complex chemical body in the blood, and its almost immediate destruction, apparently without a sufficient object. The lactates have feeble resisting power. Oxygen, at the temperature of the body, and in its active state (ozone), tears asunder the chemical atoms of the acid, forming carbonic acid and water, its oxygen is set loose in a nascent state (highest intensity of chemical force), and the alkalies escape through the kidneys. The blood, by these combined agents, oxygen and lactic acid, is the seat of intense molecular commotion. This state of the organizable matter, it has been shown, is a *sine qua non* of all vital actions. The enigma above stated is solved. The final result of this discussion is that the intention of the immense provision of amylaceous and saccharine substances in the food of animals is the constant production of lactic acid in the blood of animals, to assist in the support of vital motion in the blood. The mode of action of some deadly poisons bears comfirmative evidence in favor of the doctrine. Carbonic oxide, hydrocyanic acid, sulphuretted hydrogen, chloroform appear to exert their fatal effects by arresting the chemical action of oxygen in the blood. Carbonic oxide expels the oxygen of the circulating fluid, though it retains the arterial hue even in the veins. (*Bernard.*) The blood, in poisoning by hydrocyanic acid, is of a dark hue, neither venous nor arterial; it is the same for sulphuretted

hydrogen. Exposed to the air or oxygen, the color is not changed. The same facts attend the poisoning by aconitia and veratria. The blood has been reduced to a quiescent state—to a statical condition, and sudden death is the inevitable consequence. Their mode of action on external bodies shows the correctness of our explanation. They prevent fermentation, and arrest it when in progress. Now Pasteur has demonstrated that fermentation is a vital and not a chemical phenomenon, produced by the development and nutritive action of living organisms, vegetable and animal. In alcoholic fermentation sugar is decomposed by the torula cerevisia, which abstracts a part of its carbon and hydrogen for its own nutrition. The remaining constituents enter into new combinations forming vegetable carbonic acid and alcohol. The vitality of the organism is destroyed by the poison, and the fermentation ceases. Modern physicists have demonstrated that light, heat, magnetism, and electricity, the great forces of nature, are varieties of motion. This investigation has led to a similar conclusion, that all purely organic and vital phenomena arise from atomic disturbance and molecular motion.

In the preceding discussion I have adhered to the doctrine of M. Cl. Bernard that the heart injects without intermission into the blood, in normal conditions, a certain quantity of glucose. I am perfectly aware that the fact has been contested by Dr. F. W. Pavey. I have not been convinced by his facts or his argument. He starts with the assumption that all the examinations of the blood, before his own, had been made after death, and that no one had taken the blood from the right heart by catheterism except himself. In this statement he was certainly mistaken. M. Cl. Bernard, in his physiological winter course of 1855, on the 9th of January, in his fifth lecture, made a comparative experiment on two dogs, the one fasting, the other in the act of digestion after a full meal of animal food. The object of the experiment was to show "the physiological oscillations in the distribution and amount of sugar in the blood under the influence of digestion." This was done by taking portions of blood, from the right ventricle, the carotid, and the jugular of each animal. The blood was obtained from the right heart by catheterism—"*en pratiquant une sorte de catheterisme cardiaque*"—which was performed by a simple instrument, of which he gives a figure, and he designed a simple and neat method of operating which he describes. It is omitted for want of space. The results were, that of the samples taken from the first dog (fasting) in

that from the right ventricle alone was sugar detected in small amount; but those from the second dog all yielded sugar, that from the right ventricle quite abundantly, less in that from the carotid, and still less from the jugular.* These conclusive experiments appear to have been unknown to Dr. Pavey.

M. Chaveau, 1856, presented to the Academie des Sciences a series of experiments on the blood of large quadrupeds, as horses, asses, mules, etc. His connection with the Imperial Veterinary School of Lyons gives him great facilities for experimenting with animals. He collected specimens of blood from horses and dogs fasting from twelve hours to six days. The blood was obtained from the coxigeal, femoral, and carotid arteries, and their collateral veins, and from the heart. A quantitative analysis was made with a uniform result; sugar was found in all the different portions of blood, that of the arteries giving the highest figures, and that of the veins the lowest. The blood from the two hearts was nearly the same. But the capital and decided fact was the catheterism of the sub-hepatic veins through the jugular, after the ligation of that vessel, and the auricle into the posterior vena cava; and the blood obtained was the richest in sugar. M. Chaveau remarks that his method was entirely physiological and not open to objection, for in operating on solipedes the animal was always standing (debout†).

I wish to state, in conclusion, that my young friend, Dr. W. F. Atlee, consulting surgeon to the U. S. Satterlee Hospital, two years since treated gangrenous wounds successfully with sugar. This discovery has been confirmed by Dr. J. H. Packard, one of the surgeons to U. S. Hospital, Beverly, N. J.‡ The active agent in this treatment is not the sugar, as is supposed, but lactic acid, into which "sugar of milk, starch, grape sugar, and cane sugar are converted by *contact* with animal substances in a state of decomposition." (*Liebig.*) I would suggest to the gentlemen, surgeons of the U. S. hospitals, in which this formidable affection has frequently prevailed, that they should give a trial of the effects of a direct application of lactic acid. It can be done very readily by using very sour milk. The wound ought to be thoroughly washed with milk, and cleansed of putrid matter, and then covered with pledgets saturated with the acid fluid frequently renewed.

*Leçons de Physiologie Experimentale, vol. i, leçon v, pp. 119–122.
†Comptes Rendus de l'Académie des Sciences, vol. xiii, pp. 1008–12.
‡See January No. of this Journal.

This explanation is supported by the well known fact, that the gastric juice, in which lactic acid is always present, is antiseptic, and arrests putrefaction.—*Am. Jour. of Med. Sci.*

NOTICE OF McPHERSON HOSPITAL.

By Col. T. P. ROBB, State Sanitary Commissioner.

McPherson Hospital occupies the building erected by the city for a city hospital, and used as such previous to the rebellion. It occupies a commanding site, and overlooks much of the ground made historical by the memorable "siege of Vicksburg." It is a commodious structure, but has been much improved since its occupation by us, especially in its interior arrangements. It is, and has been since its establishment, under the charge of Surgeon Powell, of the 72d Illinois Infantry Volunteers. Surgeon Powell has evidently, with a just and commendable pride in his profession and office, devoted all the powers of his cultivated mind to the making it "the Model Hospital," and to my mind he has fully succeeded. It surpasses anything of the kind that I have witnessed in all my experience. It seems to be perfect in all its parts and arrangements. The kitchen, bakery, store-room, and dining hall seem faultless, and would positively be viewed with envious eyes by our best and most fastidious housekeepers of the north, proverbial as that region is for its women of housekeeping propensities. The wards are neatly arranged with an eye single to the comfort of the inmates, and all the rooms are kept in a state of continual cleanliness, that would elicit the admiration of the most zealous devotee of the broom and scrubbing-brush. There is a place for everything and everything in its place. The most perfect order prevails. For the convalescents, (and in such a well ordered house they are numerous,) there is a reading-room, with its large and well selected library, bath-rooms, wash-room, and barber-shop. There is a billiard-room, with a good, though confiscated rebel, billiard table. Though not a judge of such articles, I presume it was "one of Phelan's best." In the yard are swings and other gymnastic apparatus, and a fine bowling-alley just being completed. These improvements have been made, for the most part, without cost to the government, by the aid of convalescent inmates, and

show what can be accomplished by an energetic and intelligent surgeon, whose heart is in his work. No one, after spending an hour in the hospital, will doubt that all these things contribute much to the recovery of the patients. It is to be hoped that more of our surgeons, in charge of hospitals, will in like manner attempt the improvement of the surroundings and interior arrangements. In my opinion the trouble would be amply repaid in the increased comfort, contentedness, and speedy convalescence of the inmates.—*Report to State Sanitary Commission.*

LAST HOURS OF ABRAHAM LINCOLN.

By C. S. TAFT, Acting Ass't Surgeon, U. S. A.

The following brief report of the circumstances attending the assassination, last hours, and autopsy of the late President, will doubtless prove of much interest to the profession, and may be relied upon as correct in all particulars, the notes from which it is written having been submitted to comparison with others taken, and corrected by the highest authority.

While sitting in an orchestra chair at Ford's Theatre, on Friday evening, the 14th ult., about 10.30 P. M., I heard the sharp report of a pistol in the direction of the State box, and turning my head in that direction, saw a wild looking man jump from the box to the stage, heard him shout "*Sic semper tyrannis*," as he brandished a glittering knife in his right hand for an instant, and dart across the stage from sight.

A few moments of utterly indescribable confusion followed, amid which I heard a call for a surgeon. I leaped upon the stage, and was instantly lifted by a dozen pair of hands up to the President's box, a distance of twelve feet from the stage. When I entered the box, the President was lying upon the floor, surrounded by his wailing wife and several gentlemen who had entered from the dress circle. The respiration was inaudible and scarcely perceptible, and he was totally insensible. Ass't Surgeon Charles A. Leale, U. S. V., was in the box, and had caused the coat and vest to be cut off in searching for the wound. The wound in the head was soon found, but at that time there was no oozing from it.

Several gentlemen in the box were insisting upon having the President removed to his home, but Dr. Leale and myself

protested against such a proceeding, and insisted upon his being carried to the nearest house. He was removed to a house opposite, and laid upon a bed in fifteen minutes from the time the shot was fired.

The wound was there examined, the finger being used as a probe, and the ball found to have passed beyond the reach of the finger into the brain. I put a teaspoonful of diluted brandy between the lips, which was swallowed with much difficulty; a half teaspoonful administered ten minutes afterward, was retained in the throat, without any effort being made to swallow it. The respiration now became labored; pulse 44, feeble, eyes entirely closed, the left pupil much contracted, the right widely dilated; total insensibility to light in both.

Surgeon-General Barnes and Robert K. Stone, M. D., the family physician, arrived and took charge of the case. At their suggestion, I administered a few drops of brandy to determine whether it could be swallowed, but as it was not, no further attempt was made. The left upper eyelid was swollen and dark from effused blood; this was observed a few minutes after his removal from the theatre. About thirty minutes after he was placed upon the bed, discoloration from effusion began in the internal canthus of the right eye, which became rapidly discolored and swollen, with great protrusion of the eye.

About 11.30, P. M., twitching of the facial muscles of the left side set in and continued some fifteen or twenty minutes, and the mouth was drawn slightly to the same side. Sinapisms over the entire anterior surface of the body were ordered, together with artificial heat to the extremities.

The wound began to ooze very soon after the patient was placed upon the bed, and continued to discharge blood and brain tissue until 5.30, A. M., when it ceased entirely; the head, in the meantime, being supported in such a position as to facilitate the discharge. The only surgical aid that could be rendered, consisted in maintaining the head in such a position as to facilitate the discharge of the wound, and in keeping the orifice free from coagulum.

Col. Crane, Surgeon, U. S. A., had charge of the head during a great part of the time, being relieved at intervals in this duty by myself. While the wound was discharging freely the respiration was easy; but the moment the discharge was arrested from any cause, it became at once labored.

It was also remarkable to observe the great difference in the character of the pulse whenever the orifice of the wound was freed from coagulum, and discharged freely; thus relieving,

in a measure, the compression. This fact will account for the fluctuations in the pulse, as given in the subjoined notes.

About 2, A. M., an ordinary silver probe was introduced into the wound by the Surgeon-General. It met an obstruction about three inches from the external orifice, which was decided to be the plug of bone driven in from the skull and longed in the track of the ball. The probe passed by this obstruction, but was too short to follow the track the whole length. A long Nelaton probe was then procured and passed into the track of the wound for a distance of two inches beyond the plug of bone, when the ball was distinctly felt; passing beyond this, fragments of the orbital plate of the left orbit were felt. The ball made no mark upon the porcelain tip, and was afterwards found to be of exceedingly hard lead.

Some difference of opinion existed as to the exact position of the ball, but the autopsy confirmed the correctness of the diagnosis upon first exploration. No further attempt was made to explore the wound.

After the cessation of the bleeding from the wound, the respiration was stertorous up to the last breath, which was drawn at twenty-one minutes and fifty-five seconds past seven; the heart did not cease to beat until twenty-two minutes and ten seconds past seven. My hand was upon the heart, and my eye on the watch of the Surgeon General, who was standing by my side, with his finger on the carotid.

The decubitus during the whole time was dorsal, and the position on the bed diagonal; the length of the bedstead not admitting of any other position.

The respiration during the last thirty minutes was characterized by occasional intermissions; no respiration being made for nearly a minute, but by a convulsive effort air would gain admission to the lungs, when regular, though stertorous, respiration would go on for some seconds, to be followed by another period of perfect repose.

At these times the death-like stillness and suspense were thrilling. The Cabinet ministers, and others surrounding the death-bed, watching, with suspended breath, the last feeble inspiration, and as the unbroken quiet would seem to prove that life had fled, turn their eyes to their watches; then as the struggling life within would force another fluttering respiration, heave deep sighs of relief, and fix their eyes once more upon the face of their dying chief.

The wonderful vitality exhibited by the late President, was one of the most interesting and remarkable circumstances

connected with the case. It was the opinion of the surgeons in charge, that most patients would have died in two hours from the reception of such an injury, yet Mr. Lincoln lived from 10.30, P. M., until 7.22, A. M.

The following observations of the pulse and respiration were noted down by Dr. A. F. A. King, at the bed-side, and are correct. The pulse was counted by Acting Ass't Surgeon Ford:

10.55—48. 11.06—45. 11.18—42, and weaker.
11.24—42, respirations 27 per minute, breathing quiet.
11.26— irregular, intermits occasionally.
11.30—45, respiration more frequent and vigorous.
11.32—45, stronger, resp. much more strong and stertorous.
11.39—48, respiration again silent and feeble.
11.40—45. 11.43—45, resp. stertorous.
11.47—45, resp. 24, stertorous. 11.56—48, weaker.
12.10—48, irregularly intermittent. 12.18—48, same.
12.27—54. 12.28—60. 12.29—66, intermittent.
12.38—66. 12.45—69, intermittent. 12.49—84, resp. 28.
12.56—66. 1.00—100. 1.15—92. 1.30—95.
2.10—60, resp. 34. 2.19—58. 2.32—54. 2.37—48.
2.54—48, much weaker, more thready; resp. feeble.
4.18—60, resp. 27, strong and stertorous.
5.40—64, thready, resp. 27.
6.10—60, hardly perceptible, (Barnes,) resp. 26, ster.
6.25— thready, not counted; resp. 25; insp. jerking.
6.40— insp. short and feeble; exp. prolonged and groaning; a deep, softly sonorous, cooing sound at the end of each exp., audible to bystanders.
6.45— resp. uneasy, choking and grunting; lower jaw relaxed; mouth open; a minute without a breath; face getting dark.
6.59— breathes again a little more at intervals; another long pause.
7.00— still breathing at long pauses.
7.20— died.

About 1, P. M., spasmodic contractions of the muscles came on, causing pronation of the forearms; the pectoral muscles seemed to be fixed, the breath was held during the spasm, and a sudden and forcible expiration immediately succeeded it.

At about the same time both pupils became widely dilated, and remained so until death.

During the night Drs. Hall, May, Liebermann, and nearly all the leading men of the profession in the city, tendered their services.

AUTOPSY—FIVE HOURS AFTER DEATH.

Present, Surgeon-General Barnes, Col. Crane, Dr. Stone, Ass't Surg. Woodward, U. S. A., Ass't Surg. Curtis, U. S.A., Ass't Surg. Notson, U. S. A., and Acting Ass't Surg. Taft, U. S. A.

The calvaria was removed, the brain exposed, and sliced down to the track of the ball, which was plainly indicated by a line of coagulated blood, extending from the external wound in the occipital bone, obliquely across from left to right through the brain to the anterior lobe of the cerebrum, immediately behind the right orbit. The surface of the right hemisphere was covered with coagulated blood. After removing the brain from the cranium, the ball dropped from its lodgment in the anterior lobe. A small piece of the ball, evidently cut off in its passage through the occipital bone, was previously taken out of the track of the ball, about four inches from the external wound. The hole made through the occipital bone was as cleanly cut as if done with a punch.

The point of entrance was one inch to the left of the longitudinal sinus. The ball was flattened, convex on both sides, and evidently moulded by hand in a Derringer pistol mould, as indicated by the ridged surface left by the nippers in clipping off the neck.

The orbital plates of both orbits were the seats of comminuted fracture, the fragments being forced inward, and the dura mater covering them remaining uninjured. The double fracture was decided to have been caused by *contre coup*. The plug of bone driven in from the occipital bone, was found in the track of the ball, about three inches from the external wound, proving the correctness of the opinion advanced by the Surgeon-General and Dr. Stone as to its nature, at the exploration of the wound before death.

The ball and fragments, together with the fragments of the orbital plates and plug from the occipital bone, were placed in the possession of Dr. Stone, the family physician, who marked and delivered them, pursuant to instructions, to the Secretary of State, who sealed them up with his private seal. The Nelaton probe used was also marked by me, and sealed up in like manner.—*Med. and Surg. Rep.*

EDITORIAL AND MISCELLANEOUS.

THE NEW MISSION OF THE AMERICAN MEDICAL ASSOCIATION.

The *Medical and Surgical Reporter*, of Philadelphia, a few months since, called attention to the losses of some of the physicians of Chambersburg, Pa., by the rebel "raid" on that place last summer, and proposed that the profession contribute to reimburse the same. In an editorial in the issue of April 15th the subject is again brought forward, amplified, and accompanied with a more explicit proposition to raise a fund for their relief. Nor does the *Reporter* now propose that the Chambersburg sufferers shall be the only recipients of this charity, but that it shall be extended "to all of our profession in the border States or elsewhere, who have been subjected to material losses by the ravages of the war." But we can only do the article justice by quoting from it at length:

"In view of the present aspect of affairs as connected with the rebellion, and the reasonable hope that our national troubles, so far as war and its ravages are concerned, are virtually ended, it is a proper time to propose an extension of the idea embraced in the suggestion in relation to the Chambersburg sufferers, to all of our profession in the border States or elsewhere, who have been subjected to material losses by the ravages of the war. It would be a noble instance of fraternal good will, if the medical profession of the United States were thus to unite in subscribing to a fund to make good to their brethren who have felt the ravages of the war, their office losses. The amount needed would not probably be very large, while the good done would be almost incalculable.

Within the next few weeks, many of our county and some of our State medical societies, and the American Medical Association, will meet. Let this subject be discussed, with a view to taking steps to do something practical and worthy of the medical profession of this great country. The plans might be systematized at the meeting of the American Medical Association, at Boston, in June, at which time a committee might be appointed to make an appeal to the profession of the whole country for funds. A portion of this committee might be named as an executive committee, to distribute the proceeds to those who need it. In this way it ought not to be difficult to raise a fund of fifty to a hundred thousand dollars for this purpose.

The American Medical Association could scarcely give greater evidence of its nationality and usefulness, just at this juncture, than by pursuing the course suggested. Indeed, if it gave up the greater part of its coming session to the work of perfecting a plan for raising and distributing such a fund as is proposed above, it would, in our view, be time well spent, and add greatly to the future influence and usefulness of the Association.

It is desirable to make the medical profession of this country, as far as possible, a unit in feeling, in purpose, and in action. This can best be done by the cultivation of intelligence and kindly feeling through our national medical organization. The war of the rebellion—now apparently, happily, near its close—has interfered somewhat with our intellectual and social progress, but if we are wise enough to avail ourselves of the opportunities offered us of re-establishing good feeling, it will give us the means of securing the intellectual advancement of our profession by securing their good will and co-operation. Many of our medical brethren have been deprived, by the ravages of the war, of their means of intellectual advancement The American Medical Association, by using its influence and its organization so as to aid them in replenishing their libraries and refitting their offices, would only be fulfilling its legitimate functions—in rather an unusual way to be sure, but then the occasion is an unusual one.

We invite correspondence, both on the specific subject of the Chambersburg sufferers, and on the general one of *all* those of our profession who have met with office losses by the ravages of the war, with a view of having something practical done for their benefit. *Let us help our brethren bear their burdens.*"

We certainly can hardly be wrong in supposing that the physicians of Chambersburg were unconscious of this attempt to thrust them as needy objects of commiseration upon the benevolent sensibilities of their professional brethren. "Ye have the poor always with you," is a revealed truth, that is every day attested by observation. We have forgotton who—but most likely it was some able divine—has divided this genus of persons into three species, as follows: the Lord's poor, the devil's poor, and poor devils. Now, if these members of a learned, elevating and honorable calling knew that they were to be thus publicly presented in the attitude of professional paupers, without presenting a protest against it, earnest and manly enough to have stifled such a movement, then have we no doubt among which division of the poor they are included. But we cannot do them the injustice of entertaining such a thought for a moment. The idea that the American Medical Association should lay aside its intellectual character and scientific labors, and "*give up the greater part of its coming session to the work of perfecting a plan for raising and distributing such a fund*," is as ludicrous as can well be conceived. The Knight of La Mancha, in his wildest moments, never indulged a more ridiculous fancy. The rebels, too, we suppose, are to be included in this Catholic scheme, for we are told it is to be a means of "re-establishing good feeling." This would be a fitting sequel to the efforts made at the last meeting of the Association, to furnish the rebels with what they needed more than anything else, namely: medical supplies. Had this sapient plan been carried out, its effect would have been to have returned a larger per centage of the rebels from their hospitals to the ranks, and in a shorter time, and had they accompanied this with a more rigorous starvation of our soldiers, prisoners in their hands, the war might possibly have been protracted another year, and thus offered us a longer opportunity of doing good to our enemies. But, should this project be consummated, and "fifty to one hundred thousand dollars" be obtained, we do

not hesitate, in the name of the profession, to warn the almoners that the Association may appoint to dispense this bounty, not to show themselves in the Northwest in search of their objects of pity. We are poor enough out here, but not so "poor in spirit" as to receive such a proposition without feeling affronted. A people with manliness enough to take *arms* to repel a "raid" upon their soil, would not accept *alms* to cover incidental losses; while if they lack this manliness they do not deserve either sympathy or assistance in their sufferings.

[Interesting extract from a private letter from the Surgeon in charge of the Small Pox Hospital, Natchez, Miss.—Eds.

Mrs. ——, aged 26, was admitted to Hospital January 26, suffering from small pox of confluent form. Nothing remarkable took place until Feb. 3d, when she complained of severe pain in back and abdomen. Anodynes were given, but without benefit. 10 A. M.—She gave birth to a male child of about eight months, which survived four hours. The whole surface of the child was thickly covered at birth with pustules, some fully matured and breaking down and others partially filled. The mother continued to do well until the 7th, 8 P. M., when she was again delivered of a male child, apparently of about four or four and a half months, uterine life. This child was also thickly covered with pustules, but they were not so well filled as the first.

This was certainly a case of super fœtation; the difference in size and development of each child showing plainly that she conceived at different periods. There were two placentas. The woman sank from exhaustion, and expired at 4 A. M. Feb. 9th. The children were not preserved, for want of alcohol.

Query 1*st*.—If a fœtus suffers proportionately with the mother, would not vaccinating the mother afford immunity to the child in after life?

I thought this case might be of interest to the profession, and forward for your favorable consideration what particulars I could learn regarding it previous to my being assigned to duty at this Post. There having been no medical officer stationed here the sick suffered very much and were much neglected.

H. S. HANNEN, M. D.,
Surg. in charge Col'd Ward.

Death of Dr. Valentine Mott.—The profession of medicine is suddenly called to lament the death of one of its most distinguished members, Dr. Valentine Mott. No name is so extensively known or so thoroughly identified with American Surgery as that of Dr. Mott. His long and eminently successful career, not only placed him in the very first rank of Surgeons in this country, but he stood as peer with the most renowned Surgeons of Europe. His reputation had won for him the highest honors accorded to the learned by the Scientific Societies of all countries, while at home he was regarded with veneration and affectionate esteem.

Dr. Mott was born at Glen Cove, Long Island, August 20, 1735, and was at the time of his death in his eightieth year. He was graduated in medicine at Columbia College, in 1806; soon after which he went to England and Scotland, where he continued his studies for several years.

He was long engaged as teacher in the several medical institutions of this city, and held at various times a Professorship in the Medical Department of Columbia College, in Rutgers' Medical College, in the College of Physicians and Surgeons, and in the University of New York.

Dr. Mott has not been a voluminous writer. Besides a number of reports and cases published in medical journals, his principal works were: "Travels in Europe and the East;" "Notes to a Translation of Velpeau's Operative Surgery:" "Anniversary Discourse before the New York Academy of Medicine," and "Clinical Reports."

He died, after a few days illness, ripe in years and full of honors.—*The New York Medical Journal.*

Query 2d.—Can it be possible for a woman to be pregnant, say four months advanced, and conceive again, with an uterus of a single cavity?

Eight hours after death. Post mortem in the above case revealed but one cavity, and nothing remarkable in the appearance of the uterus, excepting the mucous surface was thickly covered with pustules, none of which were well filled with pus.

U. S. A. Gen'l Hosp'l, Little Rock, Ark., Feb. 28, '65.
Editors Chicago Medical Journal:—

Gents:—Although a stranger to you, permit me to forward a very interesting case which came under my care, whilst on duty as Post Surgeon, at the "Mouth of White River," Ark. Private Cyrus Jones, of a colored regiment, was brought to the Hospital, Nov. 3d, 1864, suffering from an attack of "variola confluentia." At that time there was no medical officer assigned to duty at the Post. The patient was treated by the usual remedies, and appeared, as far as I can learn, to do well until about the 14th day after admission, when he complained of severe pain in his left foot. His comrades applied poultices of lins. pulv. and bread, but to no avail. His foot continued to grow worse until about Jan. 26th, at which time I was assigned to duty at that Post.

I found it had sloughed completely off at the tarsus; there was not a particle of hemorrhage, and the stump looked healthy. Patient's right leg at junction of lower with middle third, has also sloughed to such an extent as to expose the tibia for some four or five inches. The patient has recovered from the small pox and his general condition is very good, strange as it may appear. From the condition of his other foot, which was sloughing between the toes, and presents all the appearances of mortification, Dr. Mendenhall, Surgeon of the gunboat Tyler, and myself concluded to amputate it, which was performed at the anterior tuberosity of the tibia. He is now doing well and the stumps both look healthy.

Died.—At Kinston, N. C., April 9th, 1865, Edward E. Lynn, M. D., Ass't Surg. 65th Illinois Infantry.

Died.—In this city, 16th ultimo, David Rutter, M. D., formerly a resident of Philadelphia.

Married.—In Lawrence, Kansas, April 4th, 1865, J. L. Prentiss, M. D., and Miss R. Anderson, both of Lawrence.

BOOK NOTICES AND REVIEWS.

Hand-Book of Skin Diseases. For Students and Practitioners. By THOMA HILLIER, M. D., London. With Illustrations. Philadelphia. Blanchard & Lea. 1865.

This is an octavo volume of 353 pages, by one who has had extensive opportunities for observation, as Physician to the Skin department of University College Hospital.

During the last few years our knowledge of cutaneous diseases has been considerably extended, and the author of this moderate-sized book has well performed the labor of furnishing to Students and Practitioners a trustworthy, practical and compendious treatise, which comprises the greater part of what has been long known of cutaneous diseases, and what has been more recently brought to light by English, French, and German dermatologists.

A few original wood engravings have been introduced, to illustrate the microscopical appearances of the hair and cuticle when affected by vegetable growth. The use of the microscope is in the present day almost essential for the diagnosis of some skin diseases, and these drawings, in connection with verbal descriptions, will greatly facilitate the diagnosis of the diseases which they are intended to illustrate.

The Anatomy and Physiology of the Skin are briefly ad-

verted to. In treatment the author has avoided complexity, by not unnecessarily multiplying remedies, and by stating the principles on which treatment should be based.

The work will prove useful to the class for whom it was prepared. For sale by W. B. Keen & Co., 148 Lake st.

Alphabetical Index to Braithwaite's Retrospect. Embracing parts 1 to 50—1840 to 1865. Comprising twenty-five years of re-publications.

This is a volume of 248 pages, of great value to those who wish to refer to the past numbers of the *Retrospect*; a work which fully reflects the progress of European Medical Science and Literature.

A Vest Pocket Medical Lexicon. Being a Dictionary of the Words, Terms and Symbols of Medical Science, collated from the best Authorities, with the Addition of New Words not before introduced into a Lexicon, with an Appendix. By D. B. St. John Roosa, M. D., Aural Surgeon to the New York Eye and Ear Infirmary. New York. Wm. Wood & Co., 61 Walker st. 1865.

This little Dictionary is intended to serve as a pocket companion to the student attending Medical Lectures, but by no means as a substitute for the larger works of the same kind. In order to aid in pronunciation the words have been divided into syllables and accentuated. For sale by W. B. Keen & Co., 148 Lake st.

The Pharmaceutists' and Druggists' Practical Receipt Book. With a Glossary of Medical Terms, and copious Index. By Thomas F. Branston. Lindsay, Blakiston & Co., Philadelphia. 1865.

This is a work of 300 pages, and "is offered to the Chemist, Druggist and Medical Practitioner as a useful manual of reference and information." The Glossary is designed "to assist Students of Medicine in reading old receipts and prescriptions, and to understand the contractions and scientific terms used in the medical art."

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CHICAGO

MEDICAL JUORNAL.

VOL XXII.] JUNE, 1865. [No. 6.

ORIGINAL COMMUNICATIONS.

ON DIARRHŒA AS SEEN IN THE CAMPS.

By ERWIN L. JONES, Ass't Surg. 53d Wis. Inft.

Messrs. Editors Chicago Medical Journal:—

I have the pleasure to lay before you for publication, a few words upon the subject of Diarrhœa, and which, if they are worthy, I am confident you will find a place for in your *Journal*, especially as the ideas advanced are based upon those principles of Medicine taught at the College in which you occupy the position of instructors, and of which, I am proud to say, I am a graduate.

I do not propose to advance an elaborate article upon the subject upon which so much has been said—of the cause, treatment, and morbid anatomy of this disease—indeed, that I am not competent to do so, I can say with no discredit, but

I do propose to tell what I have seen myself; to recommend those plans of treatment that have proved the most successful with me; to call to mind old facts and to claim no credit for the discovery of new ones.

Since March, 1864, I have been continually employed as Contract Surgeon by our Government, and doing duty in general hospitals, the greater portion of the time in Nashville, Tenn., and among the great variety of diseases thus brought under my immediate notice, none appeared so frequently, or whose treatment was so unsatisfactory—not only at my own hands, but at those of my medical associates—as the disease under consideration—filling the hospitals with men that, but for this affection, would be able to do duty in the field.

I do not wish to be understood as speaking of this disease as an insignificant or simple one; on the contrary, I wish to urge its great, and I am inclined to think unacknowledged, importance. Often have I heard the medical attendant say to his visitors, "All these patients have *only* a diarrhœa."

"What treatment are they under?" you ask. The answer is, "Treatment does them no good," or "They complain of greater discomfort when their discharges are controlled." And upon inquiry you learn that the way these unfortunate fellows get their "discharges controlled" is by some astringent preparation, placed in the ward for general distribution, with directions to a nurse (who enlisted to destroy life with combustible powder, but being elevated to the position of apothecary, becomes the means of accomplishing the same object with powders, not always combustible but often equally destructive,) to give all patients with diarrhœa a certain amount at certain intervals, of a certain astringent preparation, common to all; treating, or rather maltreating, all upon the assumption that their ailments are similar, and therefore universal benefit must be derived from the same prescription; or in other cases you may find Hope's Mixture, or Camp. et Opii Pil., or some other of the astringents usually employed, pre-

scribed, but all given for a common purpose, i. e., "to *control the discharge.*"

Again, may be found some one who does not follow the same routine practice, who has found that in some cases a mild cathartic may be of service in unloading the beseiged bowel of any irritating substance that may have been industriously crammed into it under the name of sanitary purposes, and before the "discharge controlling" practice came into effect; or who accomplish the same by depleting from the portal circulation, etc., and having done this, thinks he has done everything, (and Heaven knows this is better, and not so frequently the case as the other extreme,) and is surprised that the patient does not recover under his remedy (which he continues to ply,) and several well men's rations of half-cooked beans, beef, and sutler's sole-leather pies—of the partaking of which, however, he never knows—never having heard that a man's stomach may not be made a general purveying depot for any substance, and having no rational idea of its capacity.

Many practitioners are not aware that their patients are employing an improper diet, but they *should know and prevent it*, and prescribe the diet (in my opinion the most important part of the treatment,) with as much regularity and care as he does his pills and powders.

Another class condemn all therapeutical measures and contend that dietetic treatment is *all* that is necessary; but from ignorance or inattention, an injudicious selection of the article of diet, is equally unsuccessful with the others.

I do not mean to say that all of these practitioners are unskillful, I would rather think that they are indolent, and the fatigue and difficulty of inquiring into each individual case, when an entire ward full is depending upon his hands for treatment, has a way of reminding one of a comfortable place to sit down, where diarrhœa can not come, that is very hard to resist. Besides, more patients are usually entrusted to the care of surgeons in hospitals, than they can do justice to, as many as one hundred and fifty not unfrequently depending

for treatment upon one person. The result is, that the Medical attendant fails to do justice to the patients, himself, or the profession he should strive to improve and cultivate.

Many diarrhœas are due to causes that can not be always removed; of these I shall not speak. I would refer to those disorders occurring from errors in diet, and constituting, in my opinion, a greater proportion than have been generally acknowledged; those too, who have diarrhœa arising from other causes, are often kept in a state of prostration by improper food and medication, long after the first cause has been removed.

I have heard surgeons say, "My patients can not complain of their diet at my hospital; they have all they want." And here is where the error often lies; the patient being the only judge of what he shall eat. But under some circumstances they are not so fortunate. Food of an inferior and unsuitable kind, or if good, spoiled by the inefficiency of cooks who, so far as my experience extends, are enlisted men, with no knowledge of that branch of industry, and who do not remain in the situation long enough to profit by what they learn there, but are sent to the field and their places in turn supplied by others, who are themselves deposed by some examining board or by an order to send all men able for duty to their respective commands.

I think it would be a measure of economy if our Government would procure efficient cooks, even if obliged to employ them as such, and have at least one in every general hospital.

I am inclined to think that many diarrhœas are kept up by a state of irritation which, if allowed to go down, the patient would be restored. I can say that I have cured many patients by simply regulating the diet, carefully noting such substances, in each individual case, as appeared to agree the best with them, and excluding all others. Employing as few articles at a time as possible, at the same time attending to the general condition of the system, and surrounding the patient with those hygienic influences, so truly important alike to the healthful and infected.

I found some done well on nitorginous food, others on farinaceous or oleaginous, but the latter less frequently produced good results. Some were totally unable to take food at all, the stomach rejecting at once any and everything taken into it, or only after a time of nausea and oppression, accompanied by griping pains in the bowels; in such cases I enforced total abstinence, allowing the patient to take nothing into his stomach until all such symptoms had entirely passed away, and was then gratified to find that some article of food would be acceptable if given in proper quantities and properly prepared, while the pain, nausea, and oppression so frequently complained of before, were lessened or totally destroyed.

For four months last summer I was ill with the disease myself, during which time, not only myself but all my medical associates industriously contributed to my misery, and the amount of medicine I swallowed is truly fabulous. Everybody had a formula that was a sure one, and congratulated me on my good fortune in falling into their hands for treatment, while I regretted that the same had not sooner taken place.

At last I discontinued all medication, and the sense of discomfort in my abdomen taught me what I could *not* eat, and suggested the propriety of thinking of something that I *could*, and from that date I began to recover, and did so entirely in a reasonable time.

At times I found that I could not eat the least particle of farinaceous food without severe griping pain, while animal soups and even meats properly prepared, would occasion no discomfort. I could even eat baked beans, while wheat bread *always* caused pain. In other cases that afterwards occurred in my practice there, I noticed the same peculiarity.

I suppose this was occasioned by the difference in the seat of the irritation, which exists where certain elements of food were digested, therefore such articles as contained these elements always produced pain.

When I received a patient for treatment with Diarrhœa, I removed all substances from the intestinal canal by a mild but thorough cathartic; having done this, I found what articles of food would be best received and in what quantities. If much irritation of the stomach existed, the usual means were employed to relieve it, small pieces of ice swallowed always proving grateful to the patient. In the greater number of cases stimulant treatment was necessary, as soon as the irritability was sufficiently allayed by rest, both mechanical and physiological, and usually whiskey, or in other cases mur. tinc. ferri was the prescription, stronger astringents than these I never found necessary. Sometimes opium to allay pain in the bowels, but I generally found that if a proper diet was chosen, no pain was produced.

When the disease was characterized by remissions quinine was used, frequently in combination with piper nigra pulvis.

The most scrupulous attention to cleanliness of person, clothing, and everything surrounding the patient, fresh air, and a uniform temperature, meals at regular hours, and in proper quantities, and consisting mostly of soups, solid food being excluded as much as possible.

At home I have a perfect history of my own and many other cases, that I could produce if necessary, to show the value of this treatment, but as I write from the field I can not do so at present.

CLINICAL LECTURES ON DISEASES OF THE EYE.

By E. L. HOLMES, M. D., of Chicago,
Lecturer on Diseases of the Eye and Ear in Rush Medical College, and Surgeon of the Chicago Charitable Eye and Ear Infirmary.

THE SCLEROTICA, OR SCLERA.

Gentlemen:—The case of Hydrophthalmos and of partial staphyloma of the sclerotic, which I have presented to your notice within the past fortnight, are examples of the diseases of which I propose to speak to you to-day.

The sclerotic is the dense, white membrane, with scarcely any elasticity, which gives firmness to the walls of the globe. It varies in thickness from two-fifths to one-half a line, being usually thicker at its posterior than its anterior half. In old age it becomes harder, and at the same time thinner, than in youth. It is composed of several ill-defined layers of white tissue, the fibres of which are so interlaced with each other that the layers can be separated with difficulty. There are also a few fibres of elastic tissue, and also a large number of cells mingled with the fibrous tissue. Anteriorly, the structure of the sclerotic passes abruptly into that of the cornea. Posteriorly, the external layers of the sclerotic continue backwards as a covering of the optic nerve, which may also be considered as a continuation of the dura mater of the brain, through the optic foramen. The opening through the sclerotic for the optic nerve is not a simple aperture, but is a very large number of exceedingly minute openings, formed by delicate fibres of the sclerotic, passing across each other, like the wires of a seive, through each of the meshes of which passes a single fibrile of the optic nerve. This seive-like structure is called the lamina cribrosa. Near the line of demarkation between the cornea and sclerotic is a minute canal in the latter, passing like a ring around the cornea, called the canal or sinus of Schlemm, which seems to receive a portion of the blood from the choroid and ciliary processes. The sclerotic is pierced by a large number of minute vessels and nerves, especially in the region of the optic nerve and the ciliary processes, which supply the intra-ocular tissues. The sclerotic itself possesses scarcely any trace of nerves. The vessels are exceedingly minute and distributed only sparsely through it.

The inner surface of the sclerotic is quite smooth, and loosely attached to the choroid, except near the optic nerve and cornea. The external surface is covered with a layer of very loose areola tissue, the outer portion of which is quite firm. This layer forms a kind of capsule or sub-mucous tissue and is called the epi-sclerotic membrane. Its anterior hemi-

sphere is sometimes called the capsule of Thenon; its posterior, the capsule of Bonnet. The epi-sclera is richly supplied with vessels, which are usually the first congested in inflammations of the iris and choroid.

The diseases of the sclerotic are, almost without exception, secondary, dependent, in the form of inflammation, upon the injuries or diseases of the cornea, iris, or choroid, and possibly of the conjunctiva. Some authors have doubted whether idiopathic inflammation of the sclerotic ever occurs. There is reason, however, to believe that in rare instances, inflammation may attack the sclerotic primarily.

However caused, the inflammatory action presents the following phenomena: The cells of the sclerotic become enlarged, their granular contents form into new cells, which from their increase of numbers, produce thickening of tissue, and if the process continues, total or partial destruction of intercellular tissue. In the one case there may be a slough, or in the other there may be such a softening and weakening of the walls of the globe, as to render them insufficient to withstand even the normal pressure of the intra-ocular fluids. In the last case a staphyloma of the sclerotic is the result.

By far the most common cause of these abnormal conditions is choroiditis. Hence the disease is often termed sclero-choroiditis. According as the disease is confined to a portion of the globe or extends to the whole, it is called partial or total staphyloma. In my own experience all cases of staphyloma of the sclerotic have been confined to patients below middle age. In more advanced years, the sclerotic becomes harder and seems better able to resist the influence of choroidal inflammation.

In total staphyloma of the sclerotic, or as it is often called, hydrophtalmos, there is often a softening of the whole sclerotic and cornea, and consequent dilatation of these membranes to such an extent, that the globe becomes enormously enlarged. The cornea in such cases is exceedingly thin and dilated to even double its normal size. The iris is much at-

tenuated and forced forward in contact with the cornea, or becomes atrophied. The ciliary processes also lose their normal structure, and sometimes almost wholly disappear.

The lens will be found, in some cases, in a calcareous condition, or as a shapeless mass, attached to the inner surface of the cornea. In other cases it is almost completely destroyed. The vitreous humor suffers in structure, being either partially or wholly liquified. The retina presents different appearances in different cases, sometimes almost wholly disappearing, and sometimes remaining as a thin membrane, without blood vessels, attached to the optic nerve and floating in the abnormal fluids of the eye. The papilla is usually cupped, as described in the last lecture; it is, however, occasionally found upon examination, after extirpation of the globe, as a plain disc.

Partial staphyloma of the sclerotic is a projection of a portion of this membrane, generally produced either by injury, or by circumscribed inflammation of the choroid. It may appear as quite a large, ill-defined elevation on one or two sides of the eye, or as a dark-colored tumor of the size of a pea, a few lines posterior to the cornea. This latter form often depends upon inflammation of the ciliary processes, and is sometimes so extensive that the cornea is completely surrounded by small, dark-colored tumors.

As can be readily imagined, vision in nearly all cases of sclerotic disease is seriously implicated. Although the disease may sometimes remain stationary for a long period, it too often progresses, frequently with great pain and symptoms of sympathetic irritation of the other eye. The result may be atrophy, either with or without evacuation of the contents of the globe, through rupture of the walls of the staphyloma.

The principal points to be observed in treatment, are the following: In the early stages, iridectomy may prove advantageous, as tending to reduce choroidal inflammation, and remove intra-ocular pressure. In more advanced stages, repeated paracentesis, or removal of the staphyloma, as in sta-

phyloma of the cornea, have been recommended by ophthalmic surgeons. Except under very favorable circumstances, however, either of these operations is followed by more or less intense inflammation, and a long period elapses before the atrophied eye is without irritation, and tenderndess on pressure. Some distinguished oculists recommend the total extirpation of the globe. I am confident that in a large proportion of cases, the removal of the diseased globe will give much more speedy relief, with less danger of sympathetic irritation in the other eye, than the other modes of treatment which have been proposed.

Another form of disease of the sclerotic is termed staphyloma posticum, usually marked by a circumscribed projection in the sclerotic external to the optic nerve. With this condition there is a tendency to elongation of the antero posterior diametre of the eye. This elongated form of the eye can sometimes be observed by simple inspection, when the globe is rotated towards the inner angle.

The disease is recognized in an examination with the ophthalmoscope by the presence of a crescent shaped appearance around the temporal side of the papilla of the optic nerve. Almost the only subjective symptom in the early stages of the affection is myopia, its degrees depending upon the severity of the case. In the earlier stages this symptom may possibly be absent, where the power of accommodation for vision at different distances is very great. The near sightedness is caused by the increase of distance between the lens and retina, in consequence of the increase of the diametre of the globe adjust described.

The cause of the disease is obscure. It seems generally to depend upon some defect in the fœtal development of the posterior part of the sclerotic. It is not now considered as the result of inflammatory action, since there are none of the symptoms of inflammation, vision often being perfect in every respect except for distant objects. In conjunction with the congenital tendency to the disease, undue action of the recti

muscles, as in fixing the eyes upon near objects, seems to act as an exciting cause.

Comparatively little can be accomplished in the curative treatment. Usually the most that can be promised, is to arrest the progress of the disease. To this end, everything, which produces congestion, as fatigue of the eyes, especially when used long at a time, should be avoided. If at any time there is an abnormal degree of intra-occular pressure, which would tend to increase the staphyloma, iridectomy or division of the ciliary muscle may be required. It should be remembered that in many cases, in spite of all treatment, the prognosis is very grave, the disease terminating in excessive myopia, and finally total loss of sight.

SELECTED.

REMARKS ON DIALYSIS.

By WILLIAM PROCTER, Jr.

At the meeting of 1862, at Philadelphia, the question, "Is the process of Dialysis applicable in Pharmacy, and if so in what instances may it be employed?" was submitted to me, and not being reported on in 1863 at Baltimore, was continued to the present occasion. As the term "Dialysis" may not be familiar to all present, it has been deemed best to say a few words in regard to it: In the year 1849, Prof. T. Graham, of London, published his views of "liquid diffusion," or the tendency which substances in solution, when brought in contact, have to diffuse themselves into the common menstruum, or into each other. For instance, if a solution of sulphate of zinc, and another of sulphate of magnesia, of the same specific gravity, be carefully placed in contact, one above the other, and left at rest, the law of liquid diffusion will cause the salts to distribute themselves each over the whole menstruum. If only the lower stratum is a saline solution, and

the supernatant liquid is water, then, contrary to specific gravity, the salt will diffuse itself into the water above, just as dense gases diffuse themselves into the atmosphere, but in a much slower ratio.

In pursuing this subject afterwards, Prof. Graham made the important discovery that when a hydrated septum, or diaphragm of a gelatinous character, was interposed between the liquid to be diffused and the water into which the diffusion was to take place, many substances could not pass the septum, although in perfect solution, whilst others would pass with greater or less facility. On closely examining into the nature of these two classes of bodies, he found that those which passed the septum were generally crystalline in their nature, or formed crystalline compounds; whilst those which did not pass were amorphous in their structure, and, like gelatin, albumen, starch, etc., did not crystallize. The former he called *crystalloids*, and the latter *colloids*.

It then occurred to Prof. Graham that this law might be rendered subservient to analysis in the separation of one class of bodies from the other; and after many trials, which satisfied him of its value, he called the analysing power of the septum *Dialysis*.

It has long been known that certain animal tissues and porous bodies will allow the passage of one fluid and almost entirely deny the passage of another, when the two fluids are presented at the same time. This quality has been indicated by the terms *exosmose* and *endosmose*, according as the current passed into or out of the vessel of which the tissue formed a part. This quality, which enters largely into the physiological action going on in living vegetables and animals, was supposed to depend more on the nature of the tissues than as influenced by the substances themselves, and it is only since the subject of liquid diffusion has been developed by Graham that more correct views have been entertained.

In the endeavor to render dialysis a practical process, Prof. Graham employed many kinds of tissues, animal membrane of different kinds, thin sheets of gelatin, starch jelly, but none offered so great advantages as the parchment paper of Gaines, which, you are aware, is unsized paper that has been submitted to the action of bihydrated sulphuric acid, and subsequently washed to free it from acid. Parchment paper bears the same relation to crude vegetable fibre (as cotton or flax) that starch granules bear to starch jelly, formed by the rupture and intimate union of those granules. The rationale,

given for the action of the hydrated septum, is this: Suppose syrup of gum Arabic mixed with water be placed within the septum—gum being colloidal in its nature has not the power to abstract water from the colloidal septum, whilst the sugar possesses this power, enters the pores of the septum by means of its water, and passes out into the water beyond. The action of parchment paper, and other tissues that act by hydration, can be used only with aqueous solutions, it being yet a desideratum to find a material which shall act equally well with alcoholic and other menstrua.

Mr. Graham's method of dialysing liquids was to use a cylindrical hoop of sheet gutta percha, about two or three inches deep and six inches in diameter, over the lower end of which a sheet of parchment paper is secured by bringing the edges up around the outside of it in a plaited form, and securing them with cord. A larger vessel, capable of holding six or eight times as much liquid, is then filled with water so that the septum may float or be suspended at the surface of the water after it is filled with the liquid to be dialysed, so that the liquids outside of and in the cylinder shall be on a level when the action proceeds from the upper into the lower vessel. This manner of arranging them gives specific gravity in favor of the process, but the action of the septum would also go on if the liquid was at the bottom of the water. The solution of the diffused body is called the *diffusate*, and is always a very dilute solution.

What was then known of this subject was fully developed in an elaborate paper by Prof. T. Redwood, of London, in a lecture before the Pharmaceutical Society. (See *Pharm. Journal*, 515, 1862, and *Amer. Journ. Pharm.*, July, 1862.) The most important points in question are the applicability of the process to the purposes of pharmacy, and pharmaceutical chemistry and toxicology. Heretofore it has been employed in toxicological analysis with the promise of great success, as in dialysing the crude contents of the stomach of a poisoned animal, containing, for instance, arsenious acid, corrosive sublimate, strychnia or morphia. Mr. Redwood has pointed out its probable use in isolating proximate principles in sufficient quantity to be employed by the manufacturer, but heretofore no septum has been found sufficiently active to abridge the time and increase the strength of solutions, to bring the process within the limits of a just economy.

One of the best practical applications of this process is that

suggested by Mr. Whitelaw, (*Pharm. Journal*, April, 1864,) of dialysing meat brine to remove its salt, and isolate its extractive material in a fresh state, so as to get extract of meat, which can be used in soup with great nutritive power; and when added to the salt meat restoring it to the value of fresh meat in composition.

The same writer suggests (*Chemical News*, May 28, 1864,) that salt meat may, in the same way, be rendered fresh by being enclosed with its brine in a sack of skin and soaked in water.

SICKNESS IN EUROPE.

Europe seems to be getting into a panic in view of the fact that in Eastern Europe there is at present prevailing an unusual amount of sickness, with a tendency to spread westwardly. It is somewhat remarkable that most of the great epidemics recorded in history, have moved from east to west. The great plagues of the fifth century, B. C., and of the second, fourteenth and seventeenth centuries, of the Christian era, and the cholera of the fourth decade of the present century, all attest this fact.

The accounts of the disease now prevailing in Russia are at present somewhat confused, so far as they have fallen under our notice. There seems to be an effort to conceal the fact as much as possible, that there is any special sickness prevalent. A correspondent of the London *Times*, writing from Berlin, says that there appears to be three several maladies prevailing at the same time in St. Petersburg. 1. In October last, spinal meningitis broke out. This disease seems to answer the description of the cerebro-spinal meningitis, or "spotted fever," that has been so prevalent and so fatal in some portions of this country. The mortality of this disease is stated at from twenty to fifty per cent. 2. Typhus fever followed in November. This occurred sporadically at first, and gradually developed into a malignant species of recurrent fever. The fever lasts a week at a time, the several attacks being separated by intervals as long. During these intervals, the health is apparently so good that people have been dismissed from the hospital, who died soon after. A special committee has been formed under Governor-General Suwaroff to look after

those apparently cured. On a second or third attack, there is a general collapse, decomposition of blood, and paralysis. Quinine and stimulants have no effect. The deaths, at first but twenty, have risen to forty per cent. The spleen and liver are much affected. In many cases epidemical inflammation of the spleen, with *pustula maligna*, has been observed.

It would seem to be in reference to this disease that the British ambassador in St. Petersburg says:—"the fever is contagious, and is called in French, *fièvre à rechute*, in German, *das recurrirende Fieber*, and 'the relapsing or famine fever' in English. It is also styled 'remittent fever,' or 'typhus recurrens,' or 'bilious typhoid fever,' or 'synocha,' or 'miliary fever,' or 'typhinia.' It was unknown in Russia until eight months ago, when Professor Botkin called attention to it as a fever he had never seen, though foreign physicians had described it."

3. But more recently another disease, it is represented, has appeared, and it is this which seems to be creating such a panic in Europe. The malady is stated to have broken out originally on the other side of the Ural Mountains, whence it slowly threaded its way toward St. Petersburg, increasing as it went, and culminating at length among the destitute classes of an unhealthy and densely populated capital. In its steady advance toward the west it has now reached the Prussian frontier, and, in a milder form, already shown itself in the towns of Konigsberg, Dantzig, and Gumbensen. In the Waldai hills, to the south-west of St. Petersburg, whole villages are said to have been depopulated.

A Paris correspondent of a New York paper says:—"A description of the symptoms and course of the disease which reached here, at first seemed to me to be nearly the same as those in violent cases of yellow fever,—sudden pain in the nape of the neck, in the hand, or foot, or, indeed, any part of the body, followed by violent chill and fever; a second chill coming on the following day, with increased violence. This paroxysm is frequently fatal, a third invariably so. Another peculiarity, which is common in yellow fever, marks the Siberian plague, as it has been called. Patients who appear to be entirely recovered, at the end of five or six days are subject to a fatal relapse if they leave their beds."

The *Medical Gazette* of St. Petersburg, is quoted as saying —"It was during last autumn that the disease broke out simultaneously in the northeast and southwest of the Russian empire. M. Gworling, the government doctor at Perm, an-

nounced that he had seen forty cases of this disease, which commences with cold and shivering, followed by great heat, without perspiration, accompanied by colic, headache, delirium, general debility, and sometimes with a flow of blood from the nose. The disease lasts from five to six days, after which the invalid recovers his appetite, falls into a sound sleep, and the fever quits him. The fever returns after a short interval, but again ceases, and the doctor has observed this to have happened three or four times. Quinine taken in large doses cures the fever, and removes delirium, but does not produce decisive effects, nor is it sufficient to arrest the progress of the disease."

One correspondent speaks of extreme dilation of the pupils, a strong disposition to vomit, which can not be satisfied, a swelling of the abdomen, pestilential carbuncles, and dark color of the skin, as its unmistabable symptoms.

A Florence journal publishes a communication from Dr. Galligo, which gives the most connected medical account of the epidemic that we have yet seen, though still very incoherent and unsatisfactory. Dr. Galligo says:—"We have received from Dr. Tilleur, physician to the Grand Duchess Maria of Russia, who has just arrived from St. Petersburg, some important details respecting the disease now raging in that capital. This malady appears to be neither a fever of an intermittent or continuous nature, nor yet a simple typhoid fever; but it certainly is very virulent and dangerous. According to the opinions of the Russian physicians, it is the same fever that was observed for the first time in Scotland, in the year 1819, and denominated in that country the intermittent fever, from the length of the intermissions and the prolonged attacks. This fever is ushered in by cold shivering, alternating with remarkable heat (from 40 deg. to 41 deg. centigrade, or 106 deg. Fahrenheit,) the pulse beating 130. Great prostration and disorder are observable in the nervous actions, although the state of the mental faculties remains unaltered; frequent pains are felt in the head and limbs, great pain is also felt in the left hypochondria region, and an examination by palpation and percussion proves the spleen to have immensely increased in volume. The skin is yellow in color, owing to the liver being likewise affected by the malady. The initiatory attack of the fever lasts from seven to eight days, and terminates with a very copious perspiration. After the first paroxysm, an interval occurs of seven or eight days, during which the patient appears almost as well as ever, but at

the expiration of that period a second attack manifests itself like the first, but accompanied with still greater prostration. This continues also about seven days, terminating, like the other, with profuse perspiration. Sometimes a third paroxysm declares itself after a further interval of seven days, one of the symptoms being a burning thirst and complete aneurism,(?) and the patient sinks into the most profound state of prostration. The rate of mortality is eight* per cent., and the victims of this malady die during the second attack, usually from a kind of general paralysis, or through serious derangement of the nervous organs, with real decomposition of the blood, and an enormous increase in the spleen. The liver also becomes greatly enlarged, but the intestines, on the other hand, are either found healthy or else hardly congested. Every thing has hitherto failed to shorten the duration of the febrile attacks. Salts of quinine, given in large or small doses, have been quite ineffectual to overcome the attacks characteristic of this malady. In the second paroxysm, in which there is increased prostration of the forces, the most powerful stimulants have been administered—such as moss wine, alcohol, ether, camphor, etc.; but they produce little or no effect. The chief cause of this disease is supposed to be the arrival in St. Petersburg of an immense number of workmen from the neighboring provinces, and even from the most distant towns. It is said there are just now in the capital, 43,000 workmen more than the usual number. The consequence of this is, that they can not find work, and are obliged to live in unhealthy localities, and to live upon the black bread, which contains this year much more horned rye than in previous years. It has been discovered by chemical analysis that this bread contains one per cent. of horned rye in the flour with which it is made. Thus every workingman living on the same, may be calculated to eat 100 grains of horned rye per diem. Besides this, the oxen, cows, and other animals, being no longer slaughtered in St. Petersburg, but in Moscow, whence the meat is despatched ready prepared, the heads, hoofs, feet, and intestines of these animals, which previously formed one of the staple articles of sustenance of the poorer classes, on account of their cheapness, are no longer to be had at St. Petersburg, and the poor are now compelled to live almost exclusively upon the above mentioned bread, which contains injurious substances,

* This must be an error. Another account places the mortality at *seventy per cent.*

partly contributing to produce the disease in question. The malady is exclusively confined to the poorer classes.

"The authorities of St. Petersburg have ceased publishing official returns of the number of cases and mortality, but from the large sums voted by the metropolitan authorities or supplied by government, some idea may be formed of the extent and virulence of the malady. Besides 200,000 roubles (about $160,000) contributed by the treasury, 400 additional beds have been placed at the disposal of the town, and large subscriptions made by the princes and aristocracy. The town, too, has opened a new hospital, at the cost of 60,000 roubles, (about $48,000,) considerably augmenting at the same time the funds of the various charities, and aiding the convents in the care and reception of the sick."

We have given above, the best account we can collate from the materials at our hands, of this "Siberian plague," as it is called, and our readers will perceive in it evidences of the state of panic that exists in regard to it. Later accounts represent the disease as disappearing.

A great many medical men and students have, it is said, gone from Western Europe to St. Petersburg, to study into the nature and habits of the disease, and it is represented that forty or fifty of them have fallen victims to their zeal. Among its victims is mentioned Dr. Erichson, surgeon to the Emperor Nicholas, aged seventy-five.

The western nations of Europe are enforcing quarantine regulations against vessels from Russian ports, and we doubt not that proper precautions will be taken against the importation of the disease into this country. If this, or any other epidemic should be introduced into New York, in its present sanitary condition, and with such inadequate sanitary regulations as it is now subject to, the effects on the country would be deplorable. Then would be *felt* the necessity for such a Health Law, as for several years past has been before the Legislature of that State, and which has by some means been defeated each year.

An attempt is made in some quarters to inculcate the idea that some terrible epidemic will follow our rebellion—that plagues constitute a part of the natural history of rebellions. The way to meet any supposed danger from epidemic diseases is to enforce personal and municipal cleanliness, and to have plenty of air and light in our habitations.—*Med. and Surg. Reporter.*

USES OF GLYCERIN.

1. Glycerin is not a fat, nor a sugar; but chemically an alcohol.

2. For use by the physician or druggist it must be absolutely *pure;* free from chlorine, lead, lime, sulphuric acid, volatile fatty acids, and glucose; and both colorless and *inodorous.* Bower's and Price's manufacture will come up this standard.*

3. Externally applied, glycerin has no specific influence over cutaneous disorders, but is an excellent emollient, especially in erysipelas, prurigo, scaly eruptions, burns and gangrenous wounds. It may be made the vehicle for any of the preparations used for skin diseases; may be diluted if necessary for open, fresh wounds, and may have bromine, carbolic acid, etc., dissolved in it for gangrene.

4. The preparation most widely approved, as a substitute for ointment, is *glyceramyl, or plasma;* composed of glycerin and starch, mixed with the aid of heat. The proportions may vary, but are usually about one part of starch to from five to eight or even sixteen parts of pure glycerin. A little glycerin added to an ordinary poultice will keep it from becoming dry and hard. A glycerole of soap is mentioned by Dr. W. A. Smith, consisting of from one to four parts of animal soap, powdered, mixed with thirty parts of glycerin, and dissolved by heating it in a water-bath.

5. Glycerin may be used as an adjuvant to the bath (twelve ounces or more at once); softening the skin pleasantly. After bathing, a few drops of it poured upon a sponge and rubbed over the body, will have a very comfortable effect.

6. Internally, glycerin is a mild laxative; in the dose of one to four drachms, it is especially available for children.

7. It can not be relied on as an *analeptic* in phthisis; but may be useful as an expectorant.

8. In pharmacy, glyceroles are more stable than aqueous, oleaginous, or saccharine preparations, while they are less

* The best that I have been able to obtain from any other source but those above mentioned, has a perceptible and somewhat disagreeable odor when rubbed upon the hand; besides giving *copious* precipitates with solution of nitrate of silver, and with chloride of barium; which do not at all affect strictly pure glycerin.

stimulant, and generally more agreeable than alcoholic tinctures. Glycerole of quinine, of iodo-quinine, of iodide of iron, of subnitrate of bismuth, of lactucarium, of atropia, and of acetate of lead have been considerably used. Among many others that have been suggested, that of ipecac, is particularly desirable on account of the great fermentability of the ordinary syrup. I would add, also, especially the following:—

Glycerole of Quinia with Strychnia.—℞. Strychniæ, gr. j. Quin. Sulphat., ʒij. Glycerin, f ʒ iv M. ft. sol. Dose, a fluid drachm.

A combination of nux vomica with quinine has recently been found valuable in the cure of obstinate chronic intermittents, which resisted quinine alone. The above preparation will answer for the same purpose.

Glycerole of Ammonio-Citrate of Iron with Quinine.—℞. Ammonio-ferri et quiniæ citrat., ʒij. Glycerin, f ʒ iv. M. ft. sol. Dose, one or two fluid-drachms.

The addition of this to cod-liver oil destroys the nauseousness of its taste and effect; especially with the further addition of one or two drops of oil of cloves to each ounce of the mixture.

Glycerole of the Sulphites of Soda and Magnesia.—Worthy of careful and extensive trial as an antizymotic; upon the idea of Polli (*Am. Jour. of Med. Sciences*, April, 1863, p. 467, and Jan., 1865);* in diphtheria, etc.

Glycerole of Phosphate of Iron.—℞. Ferri phosphat., ʒj. Glycerin, f ʒ iv M. ft. Dose, two fluid-drachms.

This requires slight shaking when given, although nearly the whole is dissolved.

Glycerole of Oxide of Zinc.—℞. Zinci oxid., ʒ ss. Glycerin, f ʒ iv M. S. Shake before using. For external application.

I advise this as an emollient for severe burns, and in eczema, herpes, pemphigus, etc.

Glycerole of White Lead.—℞. Plumb. carbonat., ʒj. Glycerin, f ʒ iv M.

This is an almost perfect solution, all of the carbonate being suspended on slight agitation. It is recommended to be applied

**Vide* Dr. W. F. Atlee's account, in that journal (Jan., 1865, p. 82), of the good effects of sulphite of soda in pyæmia; and M. Carey Lea's paper, in the same number (p. 84), on the Transformation of Sulphites in the system.

to the edges of the lids with a hair pencil, in conjunctivitis, or general ophthalmia, acute or chronic; to inflamed hemorrhoids, and to the surface over bones affected with periostitis, of scrofulous or other origin. In the last-named affection I have found carbonate of lead of remarkable utility; and glycerin will introduce it more readily than any unguent.

Many other applications of the same or other similar preparations might be suggested. I can not pretend to exhaust the subject. Yet, in the American Pharmacopœia, but a few lines are given to glycerin, and none to any of its preparations; and in the British Pharmacopœia, it is merely mentioned as a solvent for tannin in *supposit. tannic.* It can hardly be much longer left to so insignificant a share of officinal recognition.—*Med. and Surg. Rep.*

TRANSFORMATION OF MUSCULAR FIBRE INTO FAT.

At a recent meeting of the Boston Society for Medical Improvement, Dr. J. Wyman stated that he had seen fatty degeneration occur in muscular fibre under the following circumstances: Portions of muscle were introduced into a flask with water, thoroughly boiled, supplied with air through a tube heated to redness, and then the flask was hermetically sealed. In the course of three or four weeks, on examination with the microscope, the fibres, without having become putrid were found to have the sarcolemma entire; in some the fibrillæ were still distinct, in others they were partially replaced by granules, and in others they had wholly disappeared and the fibre sheath was filled with globules of oil.

Dr. Ellis had examined some of the specimens and recognized the same appearances which are seen in ordinary cases of fatty degeneration. Rudolph Wagner found that various albuminoid substances underwent a similar change when introduced into the abdominal cavity of a living animal. It was objected to his experiments that the fat may have been secreted by the animal and substituted for the materials of the tissue introduced, these having disappeared. In the experiments here given, such an explanation is inapplicable, for since the muscular fibre was only surrounded by water, there could be no other source for the fat than the fibre itself.

In view of these facts it seems probable, as Fourcroy originally suspected, that adipocire can be derived from muscle which has undergone transformation into fat.—*Boston Med. Journal.*

INFLUENCE OF A LONG COURSE OF NITRIC ACID IN REDUCING THE ENLARGEMENT OF THE LIVER AND SPLEEN THAT SOMETIMES RESULTS FROM THE SYPHILITIC CACHEXY.

The enlargement which Dr. Budd refers to, is that which has been latterly described as due to amyloid degeneration. The most striking examples of it are seen in the victims of scrofulous or syphilitic caries. Three cases are related in which mxx of dilute nitric acid were taken ter die for a period varying from fifteen to four months, without inducing excessive acidity of the urine or any inconvenience attributable to undue acidity of the stomach. Sarsaparilla, iron, or bark, were conjoined with the acid. The result of his experience leads Budd to conclude that when the liver and spleen have become diseased in the manner specified, in sequel to protracted syphilitic disease of the bones, nitric acid, long taken, has a remarkable influence in gradually effecting the removal of the morbid deposit to which these organs owe their increased size, restoring the organs to a more healthy condition, and improving the general health. The cases further afford a strong presumption that nitric acid, taken earlier, would prevent the disease of the abdominal glands, which, when established, it tends to remedy. It is, however, essential that the disease of the bone, on which the enlargement of the liver and spleen is consequent, should be arrested; if this cannot be effected, the malady, though even then its course may be retarded, usually makes progress, and life is cut short by renal disease, which very often accompanies that of the liver and spleen. Budd suggests that a long course of nitric acid may have influence in remedying and preventing glandular enlargements, chronic ulcers, and other forms of scrofulous disease. He is persuaded that in tuberculous disease of the lung, nitro-muriatic acid, long taken, tends to prevent the further deposit of tubercle.—*Sydenham Society's Year-Book*, 1863, from *Brit. Med. Journ.*

LECTURE ON THE RESULTS OF THE SURGICAL TREATMENT OF CANCER.

By T. SPENCER WELLS, F. R. C. S.,
Surgeon in ordinary to Her Majesty's Household.

Gentlemen :—Perhaps there is no question which more frequently arises in practice, or which is answered with so much doubt and hesitation, as the question, "Should a cancer be removed?" At one time removal was the general rule of practice. Then the frequency of return after removal, and the revival of the humoral or chemical pathology, led to the rule to operate in exceptional cases. It was ascertained that by removal of a cancer in the early stage, we only removed one seat of deposit, left the blood unaltered, encouraged deposit in some other part, and so did more harm than good, often shortening life. Therefore it came to be a sort of rule of this school not to attempt to remove or destroy a cancerous tumour, unless it was either actually ulcerated, or growing so fast that the skin was about to give way, or the destruction of some vital part was threatened. It was urged that growths, having all the characters of cancer, occasionally disappeared, under the influence of hygienic or medical treatment—that other such growths have sometimes remained completely dormant for many years without injuring the health or shortening the life of the individual—and that it was absurd to say the disease was not cancerous in such cases because the patient recovered, or lived to old age unaffected by the local disease. But the most determined leaders of this school admitted that in cases where an open cancer gives great pain, and is wearing away the patient by bleeding or profuse discharge, this cancer should be removed, in the hope first of relieving suffering, and secondly, of prolonging, though not saving life. In some other cases where a cancer caused great mental anxiety to a patient, it was to be removed at her earnest entreaty, after fairly explaining the probability of a return of the disease. For many years these rules were followed in practice, and are so still by many excellent surgeons. But during the last four years a marked change has been taking place, and the professional mind is still in a state of transition. The transudation hypothesis is falling before the

cellular theory. The belief that cancer is always a disease of the blood is severely shaken by the vigorous attacks of Virchow, and the positive and visible demonstration which he affords of the local origin of morbid growths, and the secondary contamination of neighboring parts and of the blood by extension and by absorption of the products of local disease. He has gone very far towards proving that the cells of the connective tissue (commonly known as cellular or areolar tissue) are the ovules of cancerous growths, as they are of all the new cellular productions. We are still ignorant of the nature of the peculiar change or irritation which, in the first instance, alters a connective tissue cell into a cancer cell; but when once this change has taken place, and the altered cells begin to grow and multiply by division, we have clearly a focus both of local and general contamination—local, by imbibition of the fluid formed by the diseased cells into the healthy cells of adjacent tissues; and generally by absorption or transudation of the morbid products through the lymphatics and veins. Thus, the harder the tumor, the less likely to spread; the softer, the more likely both to spread locally and to contaminate the blood. The direct and necessary practical deduction for the surgeon from these views is, that all malignant growths should be removed in their earliest possible stage—as soon, in fact, as their nature is ascertained; and to this rule, surgeons seem to be partially, though perhaps unconsciously, returning.

It requires the observation, and careful observation of many years, and of many independent observers, to settle such a point as this; but a great deal has been done to show, by comparing a large number of cases of cancer where removal has been practised with others where the patient has been left without operation, that the average duration of life in the patient operated on is decidedly lengthened. No trustworthy data exist for making such a comparison with cases in which the tumor was removed at a very early stage, but my own experience is leading me to adopt the rule deduced from the pathology of Virchow. I have had several cases since the publication of my pamphlet on "*Cancer Curers*," in which I have excised growths which microscopic examination has proved to be truly cancerous, and in which no return has yet been observed. The time is obviously too short to speak of them as permanent cases—indeed, it is almost certain that in nearly all, there will, sooner or later, be a return; but the result has satisfied me that the rule of practice most commonly

followed may be advantageously modified in cases where the disease is in a very early stage. The operation at that stage is a very trifling one, is perfectly painless under chloroform; and so little necessity does there appear to be to keep patients to their rooms, that I have both in private practice and among hospital out-patients allowed them to come backwards and forwards from their homes. Supposing the general health to improve, and the cause which led to the first change in the connective tissue cells should not operate again, then *removal* really becomes *cure.*

If the teaching of Virchow, the greatest of living pathologists, be true—if the belief in the universal constitutional origin of cancerous tumors be unfounded—if the constitutional disease is, even in some few cases, secondary, the morbid condition of the blood originating in, and being kept up by a supply of hurtful ingredients from some diseased locality—how hopefully may both surgeon and patient look upon the treatment of cancer in its early stages, before the germs have spread into neighboring tissues, before they or any irritating fluid have been conveyed to a distance, before the healthy cells of neighboring parts have imbibed by endosmosis the specific or parenchymatous fluid, or this fluid has been carried by lymphatics or veins to distant parts. And, on the other hand, how fearful is the responsibility of the cancer curer who tampers with the life of the poor sufferer who has confided in his knowledge and skill! If he attempt to procure absorption of the tumor and succeed, he may produce the general contamination of the blood of which the growth itself was erroneously regarded simply as an "outward and visible sign." If he fail, he still gives time for the growth of germs, and for extension first locality, and then by absorption. If he employ caustics, he may be adopting the very practice of all others most likely to lead to a rapid and general development of cancer throughout the body, by hastening softening of the growth, setting up irritation in neighboring parts, and assisting the transmigration of cancer cells through the blood to distant parts of the body.

The fact that *removal* may really result in *cure*—that the disease may not return—should certainly encourage both patient and surgeon to think of removal in any case where the whole of the diseased part can be removed without risk or difficulty; but it would be very wrong to conceal from any patient the fact that this happy result is extremely rare, and that, except under very unusual circumstances, no more can

be expected from removal than prolongation of life, and diminution of suffering.

That *life is prolonged* by removal is now satisfactorily established by statistics. The results of different statistical tables vary. But those most to be relied on tend to prove that the average duration of life in those operated on is certainly greater than in those in whom the disease is allowed to run its course without operation. In a valuable lecture, published in the *Medical Times and Gazette*, in 1862, Mr. Paget says: "In a recent tabulation of hospital and private cases, 85 cases operated on lived an average of 55.6 months, and 62 cases not operated on lived an average of 43 months. And such proportion as this will probably always be found."

Not only is life prolonged, but *suffering is lessened.* The amount of suffering, mental and bodily, of a patient during the ordinary course of cancer is very great. "Consider," says Mr. Paget, "the pain and anxiety—the pain likely to increase daily—the misery of waking every day to the consciousness of an incurable disease; the sometimes loathsomeness; the restlessness for cure—cure, such as there are *never wanting dishonest men to promise.*" By an operation painless under chloroform, and not followed by painful dressings, this constant, daily, weary pain is relieved for a time, and the patient is also restored to a state of mental comfort which is as great a gain as the relief from pain. In some cases, where there is no hope of prolonging life, the pain and suffering from an open cancer are so great that it is right to operate simply to obtain for the patient a comparatively painless death.

If, then, the oft-repeated objection to operation—that life is not lengthened but shortened—is satisfactorily answered; if we also dismiss as unproved, and certainly erroneous, the suggestion that when the disease returns it will be in a more aggravated form than if the disease had run its own course, the question arises, "Why not operate in every case?" And the answer is ready, "Because the operation is one attended with risk to life." In some cases this risk is very great, in others very small; but taking the averege of some hundreds of cases, Mr. Paget estimates that "a patient runs a risk of 1 in 10 of dying" from the operation. Others estimate the risk as low as 5 per cent., or 1 in 20.

In a consultation, however, upon any individual case, neither patient nor surgeon will be content with a mere statement of averages. It is seen at once, as from 1 in 20 to 1 in 10 die of the immediate effects of the operation, and the aver-

age life of those operated on is over 55 months, that some patients must live many years. And the questions which are asked are not: What are the *general* results of operation? How long do people *in general* live after it? How soon does the disease *generally* return after operation? but the individual case is pressed home: What risk would there be to *my* life? How long shall *I* be likely to live? How soon may *I* expect a return of the disease?

It is said, and said truly, that general conclusions can only be drawn from general average. Mr Paget says: "To deal with single cases is a sort of surgical gambling." The gamblers, however, are they who operate in nearly every case which comes before them and they who operate in none, both classes satisfying themselves by statistical tables and general averages, rather than by forming a careful estimate of the probable results of treatment in each case. Each case must be considered by the light of general experience, but it is no less in itself a subject for separate calculation. And in every case which comes before us we must be guided by certain general rules, the most important of which may be shortly summed up as follows:—

Risk of Removal.—The average mortality being from 5 to 10 per cent., in what cases is the risk above, and in what below the average? Supposing the patient to be placed under the most favorable circumstances possible to prevent the occurrence of erysipelas, pyæmia, any form of septiæmia, or sendary hemorrhage (the chief causes of death *soon* after operation) the probable liability of any patient to these dangers may be estimated by observing certain general and local conditions. The *general* conditions favorable to operation, or those which may fairly justify the hope that a patient will not die from its effects, are that she is not more than 60 years of age, not emaciated, is well-nourished, clear complexioned, temperate, courageous and even-minded, and free from other organic disease. The reverse conditions are seen in patients over 60 years of age—in over or under fed people—the emaciated, or the fat and plethoric—those of cachectic, leukæmic, or chloro-anæmic aspect—the dejected or hysterical—and they who, in addition to the cancer, have some organic disease of heart, lungs, liver or spleen. The favorable *local* conditions are that the skin over and near the tumor is soft and healthy, free from œdema, freely movable, and free from scattered nodules of cancer—that there are no diseased cervical glands, none, or few diseased auxillary glands—that the breast is

small—that only one breast is diseased—and, if only one part of one be affected, that this is the lower part. The unfavorable local conditions are, the skin is brawny, the hair-follicles large and open, the skin over the tumor adherent, that there are scattered cancerous tubercles in the skin, that the supraclavicular glands are swollen, that there are many diseased axillary glands, that the breasts are large, that both are diseased, or, if only part of one, that it is the upper part.

By bearing these things in mind it is not difficult so to select cases as to reduce the risk of removal to a very low average, and there can be no difficulty in deciding in any case whether the risk is greater or less than the average.

When part of one breast only is affected, the rule generally followed is to remove the whole breast; and this rule is a good one if the breast is small. But when only a small portion of a large breast is affected, it is much less dangerous and equally effectual to remove the diseased part and some of the surrounding healthy tissue, than to remove the whole breast. There is good reason to believe that the disease is as long in returning when only the diseased part has been removed, as when the whole breast is removed.

When it has been decided to remove cancer, the question will arise, "Should it be removed by the knife, or by caustic?" And the answer must be framed again upon full consideration of all the circumstances of each case, but guided by the following general rules:

1. There is no proof whatever that the return of cancer after removal by caustic is less rapid than after removal by the knife. On the contrary, it is probable that the return will be more rapid, (*a*) from the greater probability that some portion of the cancer will escape the action of the caustic than the dissection of a careful surgeon; (*b*) from the inflammation set up in the surrounding tissues and the irritation of neighboring glands.

2. Admitting that the immediate risk to life from the removal by caustics may be less than after removal by the knife—in other words, that pyæmia and hemorrhage are less likely to occur—we have abundant proof that the risk is very considerable, and that the intense and long-continued suffering does in itself lead to exhaustion and death.

3. It is possible that the attempt to remove a cancer by caustics may fail altogether, that the irritation set up in the diseased growth and in the parts surrounding it, or the extension of the sloughing to vital parts in the neighborhood, may destroy the patient before the cancer is destroyed.

These objections will generally lead the surgeon to advise the patient rather to submit to excision than to caustics. But in some cases, where the situation of the growth is such that the knife cannot be used safely, caustics are decidedly preferable, as they are also in cases where the growth is small, or of moderate size, and slow in its progress, while the unhealthy general condition of the patient would render the knife more than usually hazardous; for, as Mr. Paget has said, "the constitutional maladies that greatly increase the risk of cutting, do not, except very rarely, increase the risk of caustics." There are also some cases of open cancer in a very late stage of the disease, so adherent that the knife could not be safely used, where the diseased part may be completely destroyed by caustic, and a sound cicatrix may result. Sometimes it may be well to leave the choice to a patient, after representing to her fairly the advantages of the two methods. Some may be guided by the dread of the knife, others more by the dread of pain, and it is right to allow these fears their full weight.

The cases decidedly unfit for caustics are those of acute or rapidly-growing cancer, or those of large size, and those where there is an œdematous, brawny, or tuberculated or ulcerated condition of the surrounding skin, and those where the supra-clavicular or axillary glands are enlarged and indurated. And most of the conditions which on general grounds forbid the use of the knife also forbid the use of caustic.

Supposing it to be decided to destroy a cancerous tumor by caustic, all the evidence before us goes to prove the chloride of zinc to be the most effectual and safest yet employed; that it is a matter of great indifference whether it is employed as a paste or in solution; but that its action is considerably hastened by scoring through the slough, as Justamond did, down to the living tissues beneath, so that they are not protected by the slough from the action of the caustic. The scoring is not so necessary when the chloride is used in solution as when it is used as paste, after destroying the skin by nitric acid; and it is not at all necessary if one or more pairs of galvanic plates are used as the caustic. If a piece of zinc be placed on any raw surface, and a piece of silver near it, a silver wire connecting the two, the part covered by the zinc is destroyed very rapidly, and the slough formed is a very soft one, which is easily sponged away. I saw a lady in 1854, with Dr. Lawrence, of Connaught-square, suffering from cancer of the breast, and we decided, on consultation, to adopt this method,

which Dr. Lawrence carried out most effectually. I should not be at all surprised to hear that the next great empiric who appears in London will profess to cure cancer by galvanism.

Occasionally it is advisable to apply the actual cautery instead of using caustic, and I have recently found the use of a small jet of lighted gas, by means of the instrument made by Mathieu for M. Nelaton, very efficacious. It is much more easily arranged than the galvanic cautery, is equally manageable, and has the great advantage of destroying parts without touching them; so that there is no fear of the eschar adhering to the metal, being removed as the metal is withdrawn, and bleeding thus being set up. In cancer of the upper jaw, or base of the skull, which project into the mouth, very great temporary relief is gained, even if only a partial destruction of the growth can be effected.

When removal cannot be recommended either by the knife or by caustics, it must be remembered that we can do a great deal more towards arresting, even curing cancer, than is generally believed—that our art is not nearly so powerless as charlatans assert. Growths with all the characters of cancer have occasionally, although very rarely, disappeared under the influence of remedies. Other such growths have remained completely dormant for many years, without affecting the health or shortening the life of the individual; and it is absurd to say that the disease was not cancerous in such cases because the patient recovered, or lived to old age unaffected by the local condition.—*Med. Times and Gazette*, Feb. 11, 1865.

TREATMENT OF ACUTE RHEUMATISM.

Dr. Robert Law, Prof. Inst. Med. and Clin. Med. in School of Physic in Ireland, describes (*Dublin Quar. Jour. of Med. Sciences*, May, 1864) his mode of treatment of acute rheumatism, which he asserts to be more successful than any other. It consists in a moderate venesection, almost never exceeding eight ounces, and seldom requiring to be repeated; and in the exhibition of colchicum, either in the form of the tincture or the wine of the seeds, of which preparation he does not exceed a drachm in a six-drachm mixture, or the acetous extract in grain doses; three or four times daily. "When I

consider it necessary to exhibit an aperient, which I avoid as much as possible in such cases, from the pain of the motion consequent upon the operation of the medicine, I direct the following mixture: Tincture of the seeds of colchicum, one drachm; tincture of senna, half an ounce; sulphate of magnesia, six drachms; peppermint water to six ounces. I have found considerable advantage and ease to the patient from combining opium largely with the colchicum. I have already alluded to the fact of how very unsusceptible to the influence of opium persons affected with acute rheumatism are; it is quite remarkable what an amount of it they will bear without being narcotized. I constantly direct a drachm of the tincture of the seeds of colchicum, and a drachm of liquor opii sedative, in a six-ounce mixture, or a grain of the acetous extract of colchicum, and a grain of the watery extract of opium in a pill, three times or oftener in the day.

"Thus have I combined Dr. Corrigan's narcotic treatment of the disease with my own. The local application to the inflamed joints which I have employed with the most advantage is the tincture of iodine, and especially where there is effusion into the joints, which, in most cases, disappears speedily under its use. I have generally observed, where the pericardium or endocardium is about to be affected there is, in general, previously an excited action of the organ, in which case I add digitalis either to the mixture or pill. And when an attrition murmur, or a valvular abnormal sound, indicates pericarditis, or endocarditis, I then combine mercury with the other medicines in the following formula: Acetous extract of colchicum, four grains; calomel, three grains; watery extract of opium, two grains; powdered digitalis, one grain. To be made into four pills; one to be taken every third hour. I also direct a blister to be applied to the precordial region, and the blistered surface to be dressed with mercurial ointment, in order to bring the system speedily under the influence of this medicine—convinced as I am of its power to effect the absorption of the effused lymph, whether deposited on the pericardium, or on the surface or in the substance, whether superficially or interstitially, in the valves. This is the stage of the disease when medicine can alone cure it.

If, however, as is often the case, the valvular murmur be overlooked, and the heart not be suspected of being involved in the general rheumatic affection, and consequently the suitable treatment not have been directed against the complication the lymph allowed to run its unhindered pathological course,

and in the exercise of its contractile property, permanently damages the valvular apparatus, the consequences of which injury become the objects of future treatment. Many question that it is in the power of medicine to restore the integrity of a valve which has been once diseased, and would rather believe that an abnormal sound which they supposed to indicate organic disease, now from the fact of its ceasing, was only functional or independent of structural change. As long as I am satisfied that mercury will promote the absorption of the lymph deposited in iritis; as long as I believe that a hepatized lung will return to its original condition as soon as the system is brought under the influence of mercury, so long will I cherish the conviction that mercury will do as much for the valves of the heart, which, if not exactly identical in structure with those parts I have alluded to, are at least analogous both in structure, pathological deportment, and therapeutic susceptibilities. And, under this conviction, we would explain the ceasing of the abnormal sound by the mercury having removed that which caused it. I have thought it necessary to dwell on this point of cardiac therapeutics, as I deem it of the utmost practical importance. I would also remark on the employment of digitalis in this early stage of pericarditis and of valvular disease. I have already observed how pericarditis is often preceded by an excited action of the organ. At this stage of the disease I consider digitalis is very seasonably employed, and even when lymph is effused. For as our object is now to effect the absorption of the lymph; and as we know the powers of the circulation and absorption are in an inverse relation, and therefore whatever depresses the former increases the latter, the depressing influence of digitalis on the circulation promotes the energy of the absorbents, which is required to remove the lymph. But when all hope of the lymph being removed is at an end, the time is now arrived for laying aside an agent whose direct effort is to bring the heart into a condition most favorable for a result the least to be desired, viz., adhesion of the opposite pericardial surfaces; for of course the less motion there is of the organ the less interruption will there be to this adhesion. So much for the impolicy of continuing the use of digitalis in pericarditis. And there are also objections to continuing its use in the early stage of valvular disease? Here, too, I would employ it, while my object is to remove the lymph by absorption. But I should expect as a consequence of its prolonged use a condition of the circulation—viz., its retardation—which would favor the deposition

of lymph on the valves, which lymph would be carried away by the blood if it retained its normal form and velocity. Thus have we often seen in our *post mortem* examinations what are called vegetations on the valves of the heart, which were nothing more than deposits of fibrin, which, we had no doubt, were deposited there just when the circulation was failing, and death near at hand.

The remarks which we have just made, apply to the earlier stage of valvular disease, not to that stage when the valvular disease is established, and when nature, exerting herself to overcome an obstruction, puts forth increased efforts, which, to a certain extent, have a salutary tendency. The time has now arrived when this medicine, whose direct effect is to depress the action of the heart, is out of place, as antagonizing this salutary effort of nature. It is thus we regard it as ill-suited to that increased action of the organ which is so constant in disease of the aortic valves, as also in the regurgitant mitral orifice, which eventuates, in both cases, in eccentric hypertrophy of the left ventricle. I am convinced the results of the treatment of heart disease would be infinitely more satisfactory than they are if more care were bestowed on distinguishing the different stages of the disease, and on ascertaining and applying the suitable treatment to each stage.

To return to our treatment of rheumatism. When the acute symptoms have passed away, and all fever gone, we now conclude our treatment with bark and hydriodate of potash, or quinine; and when stiffness of joints alone remains, with warm baths. We have ever found that, as long as the disease retains any of its acute character, so long will no benefit be derived from the warm bath; but so far from it the patient generally complains that his pains had been much worse. So that, in doubtful cases, the effects of the warm bath have served me as a test of the disease, as to its having passed from the acute to the chronic stage.

In thus asserting the advantage to be derived from bleeding in acute rheumatism, we limit its advantage to what is confessedly acute rheumatism; for we have heard physicians say that bleeding had not succeeded in cases in which they had employed it; and when they described the cases we were not surprised at the failure of which they complained. The cases were such as we doubt much if they can be admitted into the category of acute rheumatism, although the two diseases have at least many local features of resemblance; but the constitutional symptoms are widely different. These cases are such

as are designated diffuse inflammation, many of which we have met with as a complication of fever, and which we have described in *The Dublin Medical Journal*, Vol. XII, p. 187, in the following terms: 'We alluded to the occurrence of diffuse inflammation in some cases of this fever; we have had several instances of it, and had reason always to regard it as a most fatal complication. It exhibited itself most commonly in the form of tumefaction of the joints, sometimes with a slight erythematous blush. The knees, ankles, and wrists were the most common seat of this affection; the constitutional symptoms were in general, extreme prostration of the powers of the system, delirium, small weak pulse, diarrhœa, tympanitic abdomen, and an indescribable anxiety. On examination of the parts affected with inflammation, the tumefied joints were generally found to contain purulent matter of a thin, greenish, unhealthy character; and in some cases the cartilages were either in whole or in part destroyed, leaving the ends of the bones denuded and rough.'

We know that such cases as we have thus described have been taken or mistaken for cases of acute rheumatism, and have been treated accordingly; we can hardly wonder that success did not attend such treatment. If such cases have any title to be designated rheumatism, they should be designated typhoid or asthenic rheumatism. In speaking of venesection as an essential element of our treatment we deny the justice of identifying our treatment with that of Bouillaud who bled *coup sur coup;* while Dr. Griffin's remarks would at least seem to imply this. At a time when we exercised less reserve in ordering our patients, affected with rheumatism, to be blooded, we never carried it to anything like the length of the distinguished French physician.

We have already observed we gave a fair trial to every other mode of treating the disease, viz., the alkaline treatment, the citric acid treatment, the treatment with opium freely exhibited, the treatment with colchicum alone, and the treatment with bark, with hydriodate of potash, and none has approached the plan we have recommended, in the shortness of time required, nor has any been more certain in its results. And time and ample experience have established its pretensions with us."—*Am. Jour. of Med. Science.*

EDITORIAL AND MISCELLANEOUS.

PROCEEDINGS OF THE ILLINOIS STATE MEDICAL SOCIETY FOR 1865.

The regular Annual Meeting of the Illinois State Medical Society assembled in Royce's Hall, Bloomington, May 2, 1865, at 10½ o'clock, A. M. The President being absent, Dr. J. M. Steele, of Grandview, Vice-President, took the Chair.

Dr. T. F. Worrell, Chairman of the Committee of Arrangements, welcomed the members of the Society to the City of Bloomington, and the hospitalities of its citizens, in an eloquent manner.

The Committee also reported as present the following delegates and permanent members, viz.:

Drs. N. S. Davis, J. H. Hollister, J. S. Jewell, and E. L. Holmes, of Chicago, Cook Co.

Drs. W. J. Ballard, H. C. Luce, Z. L. Hoover, C. R. Parks, T. F. Worrell, D. L. Crist, E. R. Roe, T. P. Rogers, of Bloomington, McLean Co.

Dr. T. D. Fisher, of Leroy, McLean Co.

Dr. H. Noble, of Heyworth, McLean Co.

Drs. J. H. Tyler, D. W. Edmiston, W. W. Adams, C. Goodbrake, of Clinton, DeWitt Co.

Dr. L. T. Hewins, of Loda, Iroquois Co.

Dr. A. L. McArthur, of Joliet, Will Co.

Dr. R. E. McVey, of Waverly, Morgan Co.

Drs. S. T. Trowbridge, S. McBride, and E. W. Moore, of Decatur, Macon Co.

Dr. F. B. Haller, of Vandalia, Fayette Co.

Dr. N. Wright, of Chatham, Sangamon Co.

Dr. J. M. Steele, of Grandview, Edgar Co.

Dr. J. W. Redden, of Shawneetown, Gallatin Co.

The election of new members being in order, the following were nominated and unanimously elected:—

Dr. D. T. Whitnell, of Vienna, Johnson Co.
" A. N. Lodge, of Marion, Vermilion Co.
" J. J. Samuels, do do
" W. H. Veatch, of Pawnee, Sangamon Co,
" H. P. Merriman, of Chicago, Cook Co.
" F. E. Owens, do do
" S. M. Mitchell, of Attila, Williamson Co.
" R. T. Higgins, of Vandalia, Fayette Co.
" W. A. Elder, of Bloomington, McLean Co.
" D. A. Crist, do do

The following letter was received from the President, Dr. A. H. Luce, and read by the Secretary:—

BLOOMINGTON, *May 2d*, 1865.

Dr. C. R. PARK, *Secretary of Ill. State Med. Soc.:*

Dear Sir:—Owing to a severely painful affliction, I shall be compelled to forego the pleasure of attending the present meeting of the Society, and discharging the last duty of my honorable office. Hoping that you will have a pleasant and profitable Session; with my best wishes for the prosperity of our Association, and for the good of its Members individually,

I remain, yours truly, A. H. LUCE,
President Ill. State Med. Soc.

The following Committee of one from each county represented, was appointed to nominate officers, and fill the Standing Committees, for the ensuing year, viz.:—

Dr. N. S. Davis, of Cook County.
" J. M. Steele, of Edgar do
" A. L. McArthur, of Will do
" D. W. Edmiston, of De Witt do
" S. McBride, of Macon do
" L. T. Hewins, of Iroquois do
" W. J. Ballard, of McLean do
" F. B. Haller, of Fayette do

Dr. N. Wright, of Sangamon County.
" R. E. McVey, of Morgan do
" D. T. Whitnell, of Johnson do
" J. W. Redden, of Gallatin do

After a few minutes recess, Dr. R. E. McVey, Chairman of the Nominating Committee, reported the following officers for the ensuing year, viz.:—

For President—Dr. J. M. Steele, of Grandview.

Vice-President—Dr. F. B. Haller, of Vandalia.

2d Vice-President—Dr. C. Goodbrake, of Clinton.

Treasurer—J. H. Hollister, of Chicago.

Permanent-Secretary—N. S. Davis, of Chicago.

Assistant-Secretary—W. J. Chenoweth, of Decatur.

On motion, the report was accepted and unanimously adopted.

Drs. A. L. McArthur and S. T. Trowbridge were appointed a committee to conduct the newly elected officers to their places. Dr. McArthur introduced the President elect in a very appropriate manner. Dr. Steele, in taking the Chair, thanked the Soceity for the honor conferred upon him.

On motion, Dr. Young, of Ohio, was invited to take a seat in the Society, as a member by invitation.

On motion of Dr. J. H. Hollister, all members of the profession from other States, who might be present, were invited to participate in the meeting, as members by invitation.

Dr. J. H. Hollister offered the following preamble and resolution:—

Whereas, The members of the Illinois State Medical Society have learned with deep regret, that their esteemed President, Dr. A. H. Luce, is unable to be present, to preside over the deliberations of this Annual Meeting of the Society, and deeply sympathize with him in his affliction; therefore,

Resolved, That a committee of five be appointed to express to him, in reply to his communication, the assurances of our unwavering professional regard and personal esteem.

They were adopted, and the following gentlemen appointed

to constitute the committee—Drs. J. H. Hollister, S. T.Trowbridge, C. Goodbrake, L. T. Hewins, and N. S. Davis.

An invitation to visit the State Normal University, was received from the Principal of that Institution, which was accepted.

The reports of Standing Committees being called for in order, no communications of any kind were received from any of them.

On motion, adjourned until 2 o'clock, P. M.

AFTERNOON SESSION.

The Society met at 2 o'clock, P. M., the President, Dr. J. M. Steele, in the chair.

The report on "Spotted Fever," being the special order of business, Dr. J. S. Jewell gave an abstract of his report on that subject, which gave rise to an interesting discussion, participated in by Drs. A. L. McArthur, J. H. Hollister, S. T. Trowbridge, J. S. Jewell, C. Goodbrake, D. T. Whitnell, L. T. Hewins, T. P. Rogers, and N. S. Davis. It was evident, from the facts elicited during this discussion, either that several distinct diseases had been included under the name of Spotted Fever, or Cerebro-Spinal Meningitis, or that the disease is capable of arising from different causes, and under widely varying circumstances. In one locality in Michigan, its prevalence was alleged to have been directly connected with an immense quantity of decaying potatoes. In another locality, in this State, its origin was attributed to an extensive accumulation of the refuse cane, or sorghum, scattered over several acres of ground, and undergoing decomposition. By those who had served as medical officers in the army, it had been observed to occur most among those encamped in highly malarious localities. It was particularly frequent among those soldiers encamped on the Yazoo River. On the other hand, cases are reported to have occurred in localities supposed to be wholly destitute of malaria.

On motion, Dr. Jewell was requested to complete his report and transmit it to the Committee of Publication.

Dr. R. E. McVey, of Waverly read a paper, giving an account of an epidemic erysipelatous fever, which had occurred in his neighborhood. The subject of this paper elicited considerable discussion, after which it was referred to the Committee of Publication.

Dr. Hollister, in behalf of the committee to whom was referred the letter of the late President of the Society, Dr. A. H. Luce, reported the following:—

BLOOMINGTON, ILL., *May 2d*, 1865.

Dr. A. H. LUCE, *President of the Ill. State Med. Soc.:*—

Dear Sir:—The undersigned were appointed a special committee of the State Medical Society, to reply to your communication, received this morning, and express to you our sincere regret that your bodily infirmity prevents you from presiding over the opening exercises of this Annual Meeting. We are instructed by the Society to express to you its sentiments of regard, in the following resolutions:—

Resolved, That the members of the Illinois State Medical Society have ever regarded the name and professional standing of Dr. A. H. Luce as a credit to our profession; that we have ever cherished for him sentiments of profound respect, both for his professional attainments and moral worth, and that our esteem was manifested in proffering to him the honor of the presidency of our State Society, as the most appropriate method by which our confidence could be expressed.

Resolved, That those sentiments of regard are *to-day unchanged;* that he has our sincere sympathy in his affliction, and, that we counsel and urge that, with the consciousness of his *worth* and *innocence*, he bear up bravely in his trials, assured that in the medical profession he has *true* and *trusty friends*, as *numerous* as are associates in it.

Resolved, That Drs. H. Noble, C. Goodbrake, and T. F. Worrell, be a committee, to convey to him this answer to his communication.

The above resolutions, unanimously expressing the sense of the Society, are placed by us in the hands of the committee

appointed to convey them to you. And we desire to remain, with unshaken confidence and esteem, your brothers in the medical profession.

JOHN H. HOLLISTER,
S. T. TROWBRIDGE,
C. GOODBRAKE,
L. T. HEWINS,
N. S. DAVIS,
} Committee.

On motion of Dr. A. L. McArthur, the report of the committee was accepted and adopted.

Dr. N. S. Davis, Permanent-Secretary, presented the following report, which was accepted, and referred to the Committee of Publication.

REPORT OF THE PERMANENT-SECRETARY AND COMMITTEE OF PUBLICATION.

Soon after the close of the last Annual Meeting of the Society, the undersigned notified the chairmen of all the committees of their appointment, and of the subjects assigned to them for investigation. About four months since, he also caused to be published in the two Medical Journals in this State, a notice of the time and place of the present Annual Meeting, specifying, also, the committees expected to report at the same.

Being furnished by the Treasurer with a list of the names of all such members as had paid their annual assessment for 1864, copies of the printed Transactions for that year, were mailed to each, with prepayment of postage.

In behalf of the Publishing Committee, he would state that, as soon as the several reports and papers could be collected together, the publication was commenced in the same manner as during the two preceding years, namely, in such a way as to reduce the cost to the paper and presswork. Still, owing to the extraordinary high price of paper, and the unusual quantity of matter to be printed, during the past year, the cost of publication has been greater than usual. 300 copies were published, at a cost of $219.76. Of this sum, $111.95 have been paid by the Treasurer, leaving a balance, unpaid, of $107.81. There are now, in the hands of the Secretary,

from 50 to 150 copies of the Transactions, for each year, since 1856. But all printed copies of the Constitution and By-Laws, belonging to the Society, are exhausted, and should be replenished, together with the Code of Ethics, and a complete list of members. All of which is respectfully submitted.

N. S. DAVIS,
Permanent Secretary.

Dr. J. H. Hollister, Treasurer, presented the following report, which, with the accompanying vouchers, was referred to an auditing committee, consisting of Drs. Hewins, Rogers, and Jewell:

J. H. HOLLISTER, *Treasurer*,
In acc't with ILL. STATE MED. SOCIETY,

1864.	*Dr.*	
May 3.—To Cash received from seventeen new members for initiations at date.....		$34 00
Cash for annual dues for 1864, from fourteen members of the above, see memoranda A.....		42 00
To Cash received from thirty-one permanent members, for annual dues for 1864, see memoranda B.....		93 00
To Cash received for back dues, for 1863, see memoranda C.....		4 00
		$173 00
1864.	*Cr.*	
May 3.—Paid for printing handbill and blanks, (voucher No. 1.).....		5 00
" 10.—Paid, on order of Committee of Publication, the bill for printing Transactions for 1863, (voucher No. 2.).....		56 05
July 28.—Paid an order of same, on account of printing Transactions for 1864, (voucher No. 3.).....		50 00
Carried over.....		111 05

1865.	Brought forward.....	111 05
April 8.—Paid an order of same, on account of same, (voucher No. 4.).....		61 95
		$173 00

The amount paid to balance for indebtedness.....	$56 05
The amount paid on current expenses of the current year.....	116 95
Balance now due, for printing Transactions for 1864.....	107 81

Respectfully submitted.

J. H. HOLLISTER, *Treasurer.*

On motion, the annual assessment for the year 1865 was fixed at three dollars, for each member.

On motion, the Society adjourned 7½ o'clock P. M.

EVENING SESSION.

On the assembling of the Society, at 7½ o'clock P. M., the hall was thoroughly filled, with an intelligent audience of citizens, to hear a public address from Dr. N. S. Davis, of Chicago.

The President called the meeting to order, and introduced the speaker, who delivered an address on "The Nature of Medical Science, and its Relations to the Community." The address was listened to with marked attention; and, after its close, the audience retired, and the Society resumed the ordinary transaction of business.

On motion of the Chairman of the Committee of Arrangements, 10 o'clock, on Wednesday morning, was set apart, as the time for visiting the State Normal University.

On motion of Dr. McArthur, the Society agreed to meet at 8 o'clock, the following morning.

Dr. C. Goodbrake moved that the thanks of the Society be tendered to Dr. Davis, for his address, and that a copy be requested for publication.

Dr. F. B. Haller moved, as an amendment, that as soon as published in the Transactions, each member of the Society should endeavor to procure its publication in the leading newspaper of his section of the State.

The amendment was accepted, and the motion, as amended, was adopted.

The Society was invited to hold its next Annual Meeting in Chicago, and also in Decatur. After some discussion, Decatur was selected as the place for holding the next Annual Meeting.

The following gentlemen were regularly proposed, and unanimously elected as permanent members:

M. B. Skinner, of Mokena, Will County.
Josiah Brown, of Decatur, Macon do.
A. McBride, do. do.
J. C. Corbus, of Mendota, LaSalle do.
J. Lehmann, of Bloomington, McLean do.
Henry Conkling, do. do.
H. C. Luce, do. do.
J. W. Watters, of Selma, do.

Dr. Addison Niles, of Quincy, delegate from the Quincy Medical Society; and Dr. S. W. Noble, of Bloomington, permanent member, appeared, and took their seats.

On motion of L. W. Hewins, the Secretary was instructed to procure a suitable book, in which to enter the Constitution, and the names of all members who sign the same.

Dr. McArthur moved that the Treasurer be instructed to report the list of members who shall be delinquent in the payment of their dues, from year to year.

After some discussion, by Drs. Rogers, Steele, and Davis, the motion was lost.

On motion, the Society adjourned.

WEDNESDAY MORNING SESSION.

The Society was called to order by the President, at 8 o'clock A. M.

On motion of Dr. A. L. McArthur, of Joliet, Drs. H. Noble, J. H. Hollister, and M. B. Skinner, were appointed a committee to prepare resolutions, expressive of the feelings of the Society, concerning the assassination of the late President of the United States.

The report on Ophthalmology, being the special order, Dr. E. L. Holmes, Chairman of the Committee on that subject, presented an interesting report, which may be found in its proper place.

After some comments on that part of the report relating to the application of pressure in the treatment of severe conjunctivitis, and the use of muriate of ammonia in the treatment of iritis, by Dr. Davis; and the relation of a case of paraplegia, with total blindness, by Dr. Ballard, the report of Dr. Holmes was referred to the Committee of Publication.

The Secretary read a letter from Dr. D. Prince, of Jacksonville, stating that the report on Orthopedic Surgery was completed, but he was detained from attending the meeting of the Society, by the severe illness of his mother.

On motion, the report of Dr. Prince was referred to the Committee of Publication.

The Committee on Nominations then reported the following Committees for the ensuing year:

STANDING COMMITTEES.

Committee of Arrangements.—E. W. Moore, S. McBride, S. T. Trowbridge, J. Brown and E. S. Jones. W. J. Chenowith, Assistant Secretary.

Committee on Practical Medicine.—H. Noble, J. S. Jewell, F. B. Haller.

Committee on Surgery.—A. L. McArthur, L. T. Hewins, S. T. Trowbridge.

Committee on Drugs and Medicines.—F. R. Payne, T. D. Fitch, R. E. McVey.

Committee on Obstetrics.—C. Goodbrake, W. H. Veatch, C. R. Park.

SPECIAL COMMITTEES.

On Bromine and its Compounds as Remedial Agents, and the Pathological Conditions in which its Use is indicated.—Dr. J. H. Hollister, of Chicago.

On Ophthalmology.—Dr. E. L. Holmes, of Chicago.

On Paralysis, its Causes, Pathology and Principles of Treatment.—Dr. N. S. Davis.

The hour 10 o'clock having arrived, a recess was taken to visit the Normal University. Mr. Edwards, the Principal, together with the faculty and teachers of the University, gave the Society a very cordial reception; and, after a pleasant interchange of sentiments between Dr. Davis, in behalf of the Society, and Mr. Edwards, the company were conducted through the building, museum, etc., and returned highly gratified with their visit.

AFTERNOON SESSION.

The Society was called to order by the President at 1½ o'clock P. M.

Dr. N. Wright, of Chatham, read a paper on the Importance of Diuretics in the Treatment of Malarious Diseases, which was referred to the Committee of Publication.

Dr. Addison Niles, of Quincy, read the report of a case of Puerperal Fever, successfully treated, chiefly, with large doses of opium. The report was accepted, and referred to the Committee of Publication.

On motion of Dr. W. S. Noble, the Special Committees mentioned on pages 10 and 11 of the printed Transactions for 1864, were continued.

The following members were elected to represent the Society, as delegates, in the next Annual Meeting of the American Medical Association:

A. L. McArthur, M. D., of Joliet.
L. T. Hewins, M. D., of Loda.
J. W. Redden, M. D., of Shawneetown.
J. M. Steele, M. D., of Grandview.

J. S. JEWELL, M. D., of Chicago.
H. NOBLE, M. D., of Heyworth.
T. F. WORRELL, M. D., of Bloomington.
E. L. HOLMES, M. D., of Chicago.
J. W. FREER, M. D., of Chicago.
E. W. MOORE, M. D., of Decatur.
A. NILES, M. D., of Quincy.
A. W. HEISE, M. D., of Joliet.
R. E. MCVEY, M. D., of Waverly.
L. CLARK, M. D., of Rockford.
H. C. LUCE, M. D., of Bloomington.
D. PRINCE, M. D., of Jacksonville.
D. BRAINARD, M. D., of Chicago.
W. A. ELDER, M. D., of Bloomington.
J. BROWN, M. D., of Decatur.
N. WRIGHT, M. D., of Chatham.

The following resolutions were offered by the Secretary, and unanimously adopted:

Resolved, That the thanks of the Society be tendered to the Committee of Arrangements for the excellent manner in which they have attended to their duties; and for the hospitalities extended to us during the present meeting.

Resolved, That our visit to the State Normal University was highly gratifying to every member, and we regard the institution, under the direction of its present able Principal and Faculty, one of the most important educational institutions in our State.

Dr. H. Noble, in behalf the Committee appointed for that purpose, made the following report, which was unanimously adopted:

Mindful of the gloom that rests upon all loyal hearts, as the remains of our lamented President are being borne thro' our midst, to their last resting place; cherishing with inseperable affection with them all that is dear in home and a united land; ready at all times to render personal services and sacrifices for their preservation and defence, second to

no other class of men, we, the members of the Illinois State Medical Society, in Annual Session convened, desire to make record of our regard for our deceased Chief Magistrate, and the causes that led to his assassination, in the following resolutions:

1*st. Resolved*, That in the death of ABRAHAM LINCOLN, President of the United States, we mourn the loss of an able and pure patriot, a man of the people, allied to them by every tie of interest and affection, earnestly devoting every energy of his being to the integrity and welfare of the entire Union, stricken down by a ruthless and dastard hand, aimed not at himself, but the heart of the American Republic.

2*d. Resolved*, That in the assassination of the President are manifest the legitimate fruits of that spirit which gave birth to and fostered the rebellion. That to indifferent opposition, and even expressions of encouragement from portions of the Northern press, and the too great leniency of all our people toward treason and traitors, have rendered us all, in a measure, guilty of this mournful result.

The President is slain, but the Government still survives; and we here pledge to it a zealous and resolute support in all measures necessary to arrest and punish treason. We pledge ourselves to sustain our Government with strong arms.

3*d. Resolved*, That we commend to the favorable consideration of American youth, the life and services of our Lamented President, as a brilliant evidence of what are possibilities within the reach of the humblest child of our Commonwealth.

H. NOBLE, *Chairman*,
J. H. HOLLISTER,
M. D. SKINNER.

On motion, the Society then adjourned, to meet in Decatur, on the first Tuesday of May, 1866.

N. S. DAVIS,
Permanent Secretary.

BOOK NOTICES AND REVIEWS.

Proceedings of the American Pharmaceutical Association, at the 12th Annual Meeting, held in Cincinnati, Ohio, Sept., 1864. Also, the Revised Constitution and Roll of Members. Merrihew & Son, Printers, Philadelphia.
For sale by E. H. Sargent, Manufacturing Pharmaceutist, corner of State and Randolph Streets, Chicago, Ills. Price $1.50.

This is a work of 350 pages; and while it contains much that renders it of the first importance to the Pharmaceutist, it will also be read with profit by the Physician. We have taken the liberty to copy into the present number of the JOURNAL a portion of the Report on Dialysis, by William Proctor, Jr.

The Dispensatory of the United States of America.—By Geo. B. Wood, M. D., and Franklin Bache, M. D. Twelfth Edition—Carefully Revised. Published by J. B. Lippincott & Co. Philadelphia: 1865. For sale by S. C. Griggs & Co., 39 and 41 Lake Street, Chicago, Ills. Price, $10.

The new edition of the U. S. Dispensatory is at length presented to the profession, by whom, for some time, it has been anxiously looked for. It is issued in the same general style as former editions have been, while above two hundred pages have been added to its matter, and it has been made to conform to the new edition of the U. S. Pharmacopœia, containing all the new official remedies; and such others as, from their general interest, or utility, are thought worthy a place in its pages, and in an abridged form is brought fully up to the present status of the profession in Materia Medica, Therapeutics and Pharmacy. It is a text book in all our Medical Schools, and will be found an essential addition to the library of every practicing Physician.

—The American Medical Association will hold its sixteenth annual meeting in Boston, June 16th, 1865.

CHICAGO

MEDICAL JOURNAL.

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ORIGINAL COMMUNICATIONS.

CEREBRO-SPINAL MENINGITIS, OR SPOTTED FEVER.

By EPHRAIM INGALS, M. D.

How long this disease has been known I am not able to say, but we have accounts of its prevalence in different parts of Europe, at sundry times since the last half of the 16th century. It seems to have made its unwelcome advent on this continent, in Connecticut, during the winter of 1807–8, and in a few years extended itself into several adjoining States. From that time to the present it has been recognized at longer or shorter intervals, and in many localities, but has been especially common during the last few years, occuring over a wide extent of territory, while the novelty of its nature, its severity and frequent fatality, have secu red for it the ear-

nest attention of the profession, as is sufficiently attested by the transactions of various medical societies, and the current literature of our medical periodicals. The symptoms vary much in different cases, and yet they are numerous and characteristic enough to relieve the diagnois from any extraordinary obscurity.

A chill usually gives the first notice of the approaching disease, though this is frequently preceded by great lassitude of both body and mind. The chill is sometimes severe and protracted, sometimes light and transient, and except the case prove speedily fatal, is followed by reaction and fever. There is soreness of the throat, sometimes so slight as not to attract the notice of the patient, until attention is directed to it by the physician. Pain is the most constant and prominent symptom, usually coming early, and sometimes introducing the attack. It may extend to the whole body, or it may be limited to a part, as one or more of the joints of the extremities; or less frequently, it may be confined to the muscular tissue away from the joints. It is liable to be erratic, capriciously leaving one part only to fix itself upon another. It is sometimes light; at others it reaches a degree of indescribable anguish. It is especially likely to locate itself within the head and spine, affecting most the back part of the head and the upper part of the spine.

The sensibility of the skin, too, is often increased in a remarkable degree, and this when there is no pain except on motion or pressure. There may be delirium; and partial paralysis that results in irregular spasmodic muscular contractions is not an uncommon attendant, and this may affect the whole, or only a part of one side of the body. I have not seen paraphlegia from it. The muscular contractions are generally clonic, though they may be tonic, and these, when affecting the muscles of the back, occasion the most distressing opisthotonos but I believe this is less frequent than is generally thought. This symptom when present gives the disease a close analogy to tetanus, with which, I suspect, some cases are nearly allied. Spots appear upon the body, but less

uniformly than we might be led to think from this sign having given one of the names to the disease, though I doubt not they are often present when they are not seen, for though they sometimes remain a number of days, they are frequently transient. Their color is occasionally florid, but generally dark, and sometimes the two are intermingled, and in fading away they at times pass into a greenish hue. They may be large and irregular vibices, but oftener are small, petechial, and they may be so numerous as to give to the surface a mottled appearance. They come early in the disease; they are sometimes elevated, but usually not; they do not disappear under pressure, and cut down upon are found to involve the deep layers of the skin, and appear to be occasioned by the escape of blood from the vessels; and in two fatal cases I have seen the hemorragic tendency so well pronounced, that blood exuded from the mucous surfaces of the mouth, nasal passages and vagina, caused apparently by a dissolution of this fluid. In some cases vomiting is an early and distressing symptom, seemingly not due to any gastric derangement, but emenating from a morbid impression made upon the nervous system, and if this is protracted and obstinate, I look upon it as of inauspicious significance. The function of the kidneys is apt to be deranged, and for a time there may be less than the normal amount of secretion, and this may be followed by a natural or even copious flow of urine, of a dark color, which, when left to stand until it is cold, frequently gives an abundant, flocculent, pinkish sediment, which disappears again when heat is applied, and which I suppose to be the urate of ammonia. The urine, too, is sometimes tinged with blood. The pulse is soft, perhaps full, but easily compressible, and shatters under the finger as if the artery contained a fluid less cohesive than blood; it is frequently intermittent; it may be rapid or very slow, and I have seen these changes so sudden that there would be a variation of twelve beats in the different quarters of the same minute. The bowels are generally constipated, but sometimes

the reverse; and the appetite and powers of digestion occasionally remain in a remarkable degree, and I have never seen a case where the bowels themselves were the seat of pain. Its symptoms are said sometimes—especially with children—to simulate cholera morbus, but I have seen no such cases. The tongue is moist, and generally, but not always, lightly covered with a whitish coat. The disease is attended with but little fever, nor is there much thirst.

Delirium, followed by coma and profuse cold sweats, are symptoms that awaken the gravest apprehensions. The special senses of sight and hearing are sometimes lost. The diseases for which it is most likely to be mistaken are rheumatism and inflammation of the brain.

Among the most interesting considerations relating to this affection, is the question as to its essential nature—that is, is it inflammatory, or is it not? does it belong to the sthenic or the asthenic type? My own belief is that it first effects the nervous system in such a way as to impair its energy, and that in most cases, the blood speedily becoming involved tends to dissolution; that it belongs to the asthenic type of disease; and that while inflammation of the meningies of the nervous centres sometimes occurs, it is only an infrequent and accidental complication, and is by no means the essence of the malady. I have made no post-mortem examinations, and am therefore obliged to rely for the pathology upon the reports of others, and from conclusions drawn from observing its tendency and progress, and especially of the influence upon it of therapeutic agents.

Few autopsies appear to have been made of those dying of this disease; but fortunately some of these have been conducted with great intelligence and recorded with praiseworthy fidelity. The little work on Spotted Fever, by Elish North, published in 1811, and which contains a very valuable history of the epidemic which prevailed just before that time in New England, gives the result of the examination of five cases. In three of these there was no inflammation, and in the other

two it was slight, and entirely subordinate to pathological conditions of an opposite type.

In the annual volumes of the *American Medical and Philosophical Register*, published from 1810 to 1814, considerable space is given to observations on this disease; or at least to one very nearly akin to it, but in which the weight of the malady fell upon the lungs, more than upon the brain; but no valuable post-mortem examinations are recorded.

Dr. Jewell, in the *American Journal of the Medical Sciences*, for July, 1864, and Dr. Lidell, in the same journal for January, 1865, have given us the most interesting and instructive reports that I have seen. Without too much extending this article by particularizing from these or other sources, I may briefly say that the pathological post-mortem conditions have generally been found as follows. The vessels of the scalp and of the meningies of the nervous centers are abnormally full, while the blood in all parts of the body is dark, fluid and uncoagulable. The substance of the brain is nearly natural; while its ventricles, the sub-arachnoid space, spinal canal, and pericardium generally contain much serum, either clear or sanious. The kidneys are congested; and the same may be said of the lungs, while in their substance blood has been extravasated, and purpuric spots have been noticed on the mesentery.

Any opinion as to its causes would partake much of what is speculative and conjectural. It seems to be of zymotic origin—it prevails most in damp, cold weather, but is not confined to any season, temperature, or known atmospheric conditions. It follows the general law of epidemics, in that it is most fatal on its first appearance, for the reason, I suppose, that the systems most predisposed to receive the poison, and which as a consequence are first attacked, best supply the conditions to develop its virulence. Having the disease once does not protect the system, for I have treated one patient for it in two separate attacks. That it is contagious—but in a less degree than a number of diseases—I have no doubt. In

some cases in which its contagious origin was most clearly indicated, the period of incubation was from ten to fourteen days. Cases occurring in from two to five days after exposure, have always been surrounded by circumstances to make me suspect that the disease was developed from epidemic influences. It has been designated by different names; generally in Europe as thphoid meningitis, but in this country, mostly, by the appellations at the beginning of this article; but with these, it is clear enough from what has been written and said, the profession are little satisfied. Its etiology and pathology are perhaps not well enough understood to enable us to designate it in conformity with its essence and nature, and under such circumstances we should be most fortunate in the adoption of a purely arbitrary name, that should not pretend to indicate the character of the disease. Of the two names under which I have spoken of it, that of Spotted Fever is best—for nothing can be more palpable than that this is in no way descriptive of the disease, for in a large percentage of cases no eruption is observed, and I know of no serious malady that lights up so little fever in the economy, and therefore this has much of the merit of an arbitrary name. It is less easy to justify the use of the term cerebro-spinal meningitis, or paliate the objections against it, for this name seems equally inappropriate, while it embodies the misfortune that it is liable sadly to mislead us in the application of remedies. It fixes the seat of the disease in the cranium and spinal canal, and thus while the patient lives, beyond the scrutiny of our senses, while the last syllable—*itis*—indicates its nature in the most unequivocal manner, and in a way likely to exert a a baneful influence on the adoption of a plan of treatment by one not familiar with it, there is no greater reason to conclude that the disease is of an inflammatory type, because of the tendency to serous or sanious effusion, than that the pathological condition to which cholera is due is inflammation of the bowels.

The prognosis will depend much upon the character of the

prevailing epidemic, for some are much more fatal than others; but it should always be cautious, for the symptoms occasionally assume a sudden and unexpected virulence—but while it is cautious, it should at the same time be hopeful, for sometimes the patient steps back from the very embrace of the grave.

The question of treatment—the most practical and important of all—remains to be considered. I rely in this, as in most other diseases, on a small number of remedies; but I think success depends very much on the manner in which these are used, but perhaps as much on the treatment we omit as on that we apply. The chill requires to be treated, as all initial chills should be, by heat, internally and externally, and the use of gentle stimulants to bring about speedy reaction. When pain is severe, it should be subdued, and for this purpose no remedy approaches opium in power and usefulness. I am disposed to think that upon these cases opium has some specific influence beyond its power of controlling pain. Its superior value above every other remedy is attested by the best observers in all epidemics of the disease, both in this country and in Europe. If, however, with severe pain in the head, there should be great heat, the countenance suffused, the pulse not only full, but strong, then we might fear an inflammatory tendency and withhold the opium, or use it with caution. Ordinarily it should be pushed until the desired effect is obtained, and this will generally require large and repeated doses, partly in consequence of the severe pain neutralizing to some extent the natural action of the remedy, and partly perhaps because it may be curative as an antidote, and therefore is required in quantity proportionate to the morbific influence to which the particular case is due. Sulphate of Morphia, or its equivalent of any other opiate, may be given in the dose of one-fourth or one-half a grain, at intervals of from one to six hours, according to the degree of pain and the effect of the remedy. Rubefacients and epispastics are most important adjuvants in overcoming the

pain, while they also exert a beneficial influence as stimulants. They do most good applied upon the spine and nape of the neck. For the local muscular pains, Prof. Allen recommends the hypodermic opiate injection, from which I should expect an excellent effect, but have never verified this by experience. Upon the first indications of a decline of the vital powers, as shown by the flagging of the circulation, the pulse being weak, compressible, rapid or intermittent; a tendency to profuse perspiration; a blunting of the mental faculties, or loss of the special senses; then alcoholic stimulants should be pressed with the same vigor and diligence as the opium has been, and as in the use of this article, these should be given until their effects are shown in the abatement of the symptoms just enumerated, when the pulse will be firmer and more natural, the heat of the surface greater, the perspiration less, while the faculties of the mind will be aroused.

As to alcoholic stimulants, the practitioner should exercise the most sleepless vigilance. It is better to use them in advance, than to wait the establishment of the evidences of depression. They should always be administered as a precautionary measure, whenever they may be with safety. They should be given if they do no harm; and herein I would violate what I think should be a general rule, namely: to withhold medicines that are not clearly demanded; believing in general that in this particular, omission is less likely to be an error than commission. Wines are the best stimulants; and of these, Sherry, Madeira and Champaigne are to be preferred; while the distilled liquors, brandy and whisky, are excellent when they agree with the stomach, and are readily absorbed. I have said that the quantity to be administered must depend upon the effect produced, and therefore, until the desired effects are obtained, I would have the stomach constantly supplied to the limit of its capacity of absorption. Some suppose they are stimulating such cases when they administer a teaspoonful or tablespoonful of wine

or brandy every hour. Many times this is little better than to do nothing. Good care too must be taken not to discontinue the remedy too soon, for the patient must be constantly watched and carefully supported until the vital powers are re-established.

To accomplish these results, large quantities of stimulants may be required. Dr. Wilson, as quoted in North's work, found a patient to improve on the use of one pint of wine in an hour, to decline when it was withheld, and rapidly to improve when it was again freely administered. Dr. Smith "sometimes allowed his patients two bottles of Madeira in the day; and in one instance the patient took two bottles of port in little more than half that time." Dr. Bestor gave "two quarts of brandy and one quart of wine in twenty-four hours, besides twenty drops of tinct. of opium once in two hours." Drs. Haskell, Spooner and Holmes "gave to a girl twenty years old one quart of brandy and twenty grains of good Turkey opium in twelve hours, besides external stimulants." Dr. Strong "gave one quart of brandy in eight hours to a delicate female, and a grain and a half opium every two hours, and a very liberal use of brandy and opium was found necessary for a number of days, and should we mention the quantity which she actually took, our account would hardly gain credit." Dr. Lyman, in seven hours, "gave one pint and a half of wine, two ounces of brandy and other stimulants."

I have quoted thus lengthily to show to what extent these remedies may, under certain circumstances, be carried with advantage; and it is noticed that they do not occasion intoxication. Such teachings, of course, would apply only to extreme cases, and not to many milder ones which tend to speedy recovery and demand but little treatment. If the extremities are cold, they should be made warm, and for this purpose dry heat is easiest of application and best for the patient. Bottles filled with hot water and enveloped in cloths are the most convenient means. I dislike much sweating, on account of its cooling tendency, while it increases the weakness of which it is a symptom. It is better that the surface

should be at a pretty high temperature, and dry. If there is great heat of the head, apply cold, but beware of too much reducing its temperature, for this favors effusion, which is a circumstance the most to be dreaded.

For the vomiting, opium, ether and camphor are the best remedies. Associated with the means above enumerated, I have administered the bicarbonate of potash in the dose of ten or fifteen grains, every four or six hours, until from four to eight drams are taken, and I think with advantage. It at least has the merit of being harmless—notwithstanding the theoretical notions of some about the action of such remedies upon the blood.

The bitter tonics are useful, but have no specific control of the disease; they only lend some support. Cinchona, gentian and calumba are the best. I am afraid to use the sulph. of quinine, except as a tonic, in the dose of ½ to 1 gr., and then it is not so good as the fluid extract, or tinct. of cinchona, or other of the bitter tonics. I know that recoveries have followed its use in large doses; but so far as I have seen, the cerebral symptoms are aggravated by its use in this manner. I have said it is quite as important to know what to avoid as what to do. Above all things use no depletion. I perhaps do not need to caution against drawing blood; for it is not now the fashion to bleed even in inflammatory and plethoric diseases. I do not think we bleed enough, for the pendulum of custom and habit, in its vibration through its arc, has reached the extremity of absolute prohibition. If this disease was what some suppose it to be, then bleeding would be judicious practice; but it is not, and nothing is more destructive than to loose blood. This was soon found out in the epidemics fifty years ago, when bleeding being in vogue, many tried it, and found their patients to sink with appalling certainty and rapidity. Among all who have written, I have seen hardly a conflict of opinion about this. Blood then should neither be drawn by the lancet nor leeches.

This might well teach us caution in the use of depletion in the mode that the present has more generally substituted for

the lancet of the past—that is by cathartics. If the disease is not inflammatory; if it is not of the sthenic type; if it does not require depletion, then I know not upon what principle we should use cathartics, except as eliminatives; and observation, so far from confirming their utility, would teach us caution in their administration. If the secretions into the bowels are offensive, then they should be removed by the most gentle laxatives; but if they are not and the bowels seem healthy, leave them alone. If the appetite remains, as it sometimes does, give good food; and in any event, nourish the system as well as the organs of digestion will permit, and animal food is usually best.

No disease requires such vigilant watchfulness; for a few hours will precipitate from the brightest hope to trembling anxiety or the deepest despair. Some supposing it to be due to a blood poison, are moved by theoretical considerations to rely upon chemical antidotes to the *materius morbi;* but theories do so much to blind the perception and mislead the judgment that they should be followed with distrust, unless unbiased observations of the effects of remedies confirm the truth of their teachings.

GUN-SHOT WOUND THROUGH THE HEART.

A THESIS FOR THE DEGREE OF DOCTOR OF MEDICINE, PRESENTED TO THE FACULTY OF RUSH MEDICAL COLLEGE, JANUARY 25TH, 1865.

By W. ELLERY BOWMAN.

Under this somewhat startling heading, I shall devote the following pages to the report of a case which happened to be placed within my observation, and which I watched throughout with the greatest interest; and although in pursuing this course I have perhaps deviated from the ordinary custom, I trust an account of the case will be not unacceptable to the

Faculty of Rush Medical College, and if the paper have any merits, brevity shall, at least, be one of them.

On the 8th of Sept., 1864, about 8 o'clock P. M., in the town of Quincy, Ills., ———, a soldier, aged 28, and apparently healthy, while in a difficulty with a citizen had several wounds inflicted upon him by pistol shots.

My preceptor, who was in charge of one of the Military Hospitals in that place, being summoned, I was allowed to accompany him.

The patient, who had by this time been taken into a house, was evidently laboring under severe shock. The skin was deadly pale, and covered with a profuse cold sweat. The features were contracted and shrunken, and the countenance wore an expression of great anxiety and pain. The pupils were widely dilated. The pulse was absent at the wrist; and on applying the ear over the heart, its action was found to be very feeble and irregular. The respiration was slow and labored, with occasional sighing.

Consciousness was not entirely lost, for the patient complained frequently of an intense burning pain, which he referred to the right lung; and asked to be placed in various positions—that on the left side being most comfortable.

There was intense and unquenchable thirst. Stimulants, as brandy, carbonate of ammonia, etc., were administered, with small quantities of ice water, to allay thirst. Under this treatment the pulse became at times faintly perceptible, but as often disappeared. As soon as arrangements could be made, the man was carried on a litter to the hospital and placed in bed.

On examination, it was found that three balls had taken effect; one passing through the lower border of the anterior wall of the right axillary space, inflicting an insignificant wound; another entering the throax two inches externally to the inferior angle of the right scapula, having perforated the eighth rib; while the third had taken effect upon the left lateral aspect of the abdomen, midway between the last rib

and the crest of the ilium, and passed transversely inwards. From the great depression present, and the direction of the wound in the chest, it was feared that the heart had been injured. Vomiting now occurred; at the end of which, a little bright red blood appeared, not mixed with ejecta. Morphia was given in full doses to allay pain.

On account of dyspnœa in the horizontal position, it became necessary to place the patient in a semi-sitting posture, whereby he was enabled to breathe more freely. By the continuous use of stimulants, frictions and warmth, some degree of reaction was obtained. The pulse returned at the wrist and became stronger, though yet exceedingly weak; warmth came back to the surface, and the skin became dryer. These favorable symptoms, however, did not last. The patient vomited everything given him, both food and medicine.

In a few hours the skin again became cold, the pulse more feeble, and prostration again ensued. Dyspnœa was urgent, and blood, in small quantities, was frequently expectorated. The pain in the right side of the chest was severe and burning, and there was crepitation in the right lung, with some dullness on percussion. The thirst remained unabated, and seemed utterly unquenchable by any means that could be used. There had been no external hemorrhage, excepting from the wound in the chest, and from this the bleeding had been inconsiderable. The day and succeeding night wore away without any observable change in the symptoms for better or worse.

The next morning (the 10th) nature made a last, desperate attempt to throw off the load under which she now began to stagger. But the reaction in this instance was even more imperfect than the first, and depression quickly reasserted its sway. The powers of life were now failing perceptibly. Breathing was more difficult, and could only be performed in the sitting posture. The skin assumed a somewhat livid hue, from imperfect æration of the blood, and felt cold and clammy

to the touch. There was vomiting of stercoraceous matter, mixed with some blood, which had probably been brought up from the air passages and swallowed. There was a bulging of the lower part of the chest, in front and on the right side, with dullness on percussion over the right lung, and also over an unnatural extent in the præcordia.

The signs of engorgement were present in the left lung, as revealed by auscultation; and the sounds of the heart were so faint as to be heard with difficulty. During this day, sensibility seemed almost completely lost. But little complaint was made of pain, and involuntary and unconscious evacuations from the bowels took place.

At seven o'clock P. M. of Sept. 10th, the patient quietly breathed his last, after having survived the reception of his injuries forty-seven hours.

A post-mortem examination, instituted the next A. M., revealed the following:

A probe passed into the wound, which has been described as situated two inches externally to the inferior angle of the right scapula, took a direction diagonally across the thoracic cavity, from behind forwards and to the left, in a line with the position of the heart. On opening the thorax, both pleuræ were found to contain blood; the right, about f ℥ xvj, and the left a smaller quantity, probably half as much. Both lungs were engorged, and in the track of the bullet through the right lung were numerous spicula of bone from the fractured rib.

The pericardium was moderately distended with blood, portions of which had probably escaped into the pleural cavities through the apertures made by the passing ball. After traversing the right lung, the ball had entered the pericardium, and perforating the left auricle of the heart at its upper and back part, passed across the cavity, pierced the anterior segment of the mitral valve, and reaching the anterior wall of the left ventricle, passed through this at about its middle. Then escaping from the pericardial sac, it could be traced no

further. There was no mark of it on the wall of the chest, in the line of its course. It was not in the bottom of the pleural cavity, where it might have fallen after its force was expended. It might have lodged in that part of the left lung which overlaps the heart in front, and the lung collapsing when the chest was laid open, the relations of the parts to each other were so altered that in the haste with which the examination was necessarily conducted this fact was overlooked.

Opposite the wound in the left side of the abdomen an opening was found in the descending colon. As there was no perforation of the opposite side of the intestine, it was evident that the ball had dropped into the bowel; and the whole length of the large intestine was searched for the missile, but without success. It had most likely passed out with the dejections and thus escaped observation.

The extreme depression which the case had exhibited was now readily explained. It was really wonderful that vitality had been sustained so long. The man had lived two days with a bullet wound traversing his heart completely. Judging from the wounds, however, the ball was of small size, and had passed through the organ in a line more nearly parallel with its longitudinal than its transverse diameter, thereby inflicting less injury than it would had it passed transversely. As it was, death seemed to result not so much from the lesion of the heart as from apnœa, occasioned by hemorrhage into the pleuræ and lung. The mode of death was apparently a combination of apnœa and asthenia; the breathing becoming more difficult in proportion as the pleuræ became filled with blood; and the paralyzed and bleeding heart struggling on until fatally embraced by the accumulating "life fluid" (now turned a destroyer) in the cavity of the pericardium.

SELECTED.

ON THE TREATMENT OF PNEUMONIA BY RESTORATIVES.

By JOHN HUGHES BENNETT, M. D.

Observing that an effort is being made to restore the dangerous practice of bleeding in pneumonia, it will not be uninteresting to review the results of my experience regarding that disease in the Royal Infirmary of Edinburgh; the more so as the treatment I have pursued is not only most satisfactory, but the result is demonstrated by a series of recorded facts, the accuracy of which will, I think, not be disputed.

Between the 1st of October, 1848, and the 31st of January, 1865, I have been on active duty in the Royal Infirmary seventy-five months, or a computed period of six years and a quarter. During this period I have treated 129 cases of acute pneumonia. Of these, 105 were uncomplicated, and all recovered, although many of them were very severe, involving the whole of one lung in 15, and portions of both in 26 cases. Amongst the 24 complicated cases were 4 deaths: 2 from supervening meningitis, 1 from chronic Bright's disease, and 1 from extensive ulceration of the intestines. Every case has been treated publicly, and is open for inspection in the ward books; and the tabular view of the whole—commenced by Dr. Glen, my former resident physician—has been completed by the labors of Drs. Smart, Buckworth, and Macdonald, my resident physicians for 1863, 1864 and 1865. To these gentlemen I am much indebted for the pains they have taken in determining the following results, the accuracy of which is guaranteed by each of them having revised the facts in succession.

In the four fatal cases, death was evidently caused by complications independent of the pneumonia. To arrive at true statistics with regard to treatment, therefore, it becomes

necessary to eliminate them, and to fix our attention on the one hundred and twenty-five cases which recovered.

Sex.—Of the one hundred and twenty-five cases, eighty-five were males and forty were females.

Age.—The average age of the males was 31½ years. The average age of the females, 28½ years. The average age of both, 30½ years. Between the ages five and fifteen years was one case—a girl; between ten and twenty years, twenty-nine cases—twelve females; between twenty and thirty years, thirty-five cases—eleven females; between thirty and forty years, twenty-three cases—six females; between fifty and sixty years, eleven cases—one female; between sixty and seventy years, one case—a female; and between seventy and eighty years, one case—a female.

Simple or uncomplicated Pneumonia.—Of the one hundred and twenty-five cases, there were one hundred and five simple or uncomplicated, and twenty complicated. Of the former, there were seventy-four males and thirty-one females. Seventy-nine were single and twenty-six double cases. Of these I find that the clerk has omitted to state either the exact day of rigor or of convalescence in six, so that no conclusion can be derived from them as to the duration of the disease. Of the remaining ninety-nine cases, seventy-three were single and twenty-six double. The duration of the disease in the seventy-three cases of single uncomplicated pneumonia, counting from the occurrence of rigor to the commencement of convalescence, was as follows: two cases recovered in five days, four cases in seven days, five cases in eight days, two cases in nine days, eight cases in ten days, seven cases in eleven days, seven cases in twelve days, four cases in thirteen days, thirteen cases in fourteen days, two cases in fifteen days, three cases in sixteen days, three cases in seventeen days, three cases in eighteen days, one case in nineteen days, two cases in twenty days, three cases in twenty-one days, one case in twenty two days, two cases in twenty-three days, and one case in twenty-six days; the average duration, 13 2–7 days. The duration of the disease in the twenty-six cases of double uncomplicated pneumonia, counting from the occurrence of the rigor to the commencement of convalescence, was as follows: two cases recovered in eight days, one case in nine days, two cases in ten days, two cases in eleven days, one case in twelve days, one case in thirteen days, four cases in fourteen days, one case in fifteen days, two cases in sixteen days, two cases in eighteen days, two cases in

nineteen days, one case in twenty days, three cases in twenty-one days, one case in twenty-seven days, and one case in fifty-five days; the average duration, 16¾ days.

Of the one hundred and five simple or uncomplicated cases, there were nine bled by venesection and subjected to an antiphlogistic treatment before or immediately upon admission, before I saw them. The amount of blood extracted varied from twelve to thirty-six ounces; the latter in two bleedings. The duration of one case is not stated. Of the remaining eight cases, the duration was as follows: one case recovered in seven days, two cases in fourteen days, one case in sixteen days, one case in seventeen days, one case in twenty days, one case in twenty-seven days, and one case in fifty five days; the average duration was 21¼ days.

The average duration of residence in hospital of the single uncomplicated cases of pneumonia—excluding two cases in which the date of dismission is omitted, making seventy-seven cases—was 21 2–7 days: for the males (fifty-two), 18 3–5 days; and for the females (twenty-five), 27 1–5 days. Of the twenty-six double uncomplicated cases, the average duration of residence in hospital was 23 3-5 days: of the males (twenty), 23 17–20 days; of the females (six), 22½ days. The average duration of residence in hospital of eight cases bled by venesection early in the disease (the ninth case being excluded in consequence of the day of dismission not being entered in the case-book) was thirty-two days.

Complicated Cases of Pneumonia.—Of the twenty complicated cases of pneumonia, sixteen were single and four double. Of the sixteen single complicated cases the duration of the disease cannot be determined in three. Of the remaining thirteen, the duration was as follows: One case recovered in seven days, two cases in nine days, one case in ten days, one case in twelve days, two cases in fourteen days, one case in fifteen days, two cases in sixteen days, two cases in nineteen days, and one case in forty-eight days; the average duration, sixteen days. Of the four double cases of complicated pneumonia, one case recovered in nine days, one case in fourteen days, one case in fourteen days, one case in fifteen days, and one case in eighteen days; the average duration, fourteen days.

The extent of pulmonary tissue involved in the pneumonia was carefully determined in each case, and the average duration of the disease in the ninety-five single cases, deducting the unsatisfactory ones, counting from the rigor to the com-

mencement of convalescence, was as follows: One-quarter of the lung (two cases), average duration 8½ days; one-third of the lung (twelve cases), 12 days; one-half of the lung (twenty-five cases), 15¾ days; two-thirds of the lung (thirty-four cases), 14 days; three-fourths of the lung (six cases), 14¾ days; four-fifths of the lung (one case), 12 days; the whole lung (fifteen cases,) 10¾ days. Of these ninety-five cases, the right lung was affected in fifty-eight, the left lung in thirty-seven. Among these ninety-five cases also, the pneumonia was confined to the upper lobe in eleven cases, or nearly one in nine of the whole; and the average duration of the disease in these was thirteen days, and of their residence in the hospital fourteen and a half days.

A careful study of the preceding facts will, I think, tend to establish some new truths and correct several prevailing errors with regard to pneumonia. I must remind those, however, who may yet be sceptical as to the value of a restorative treatment, and imagine that some of these cases might not have been pneumonia at all, that they were all diagnosed and treated publicly in the Royal Infirmary; were all examined, not only by myself, but by intelligent clerks and assistants; and were all made the subject of clinical lectures and commentaries at the bedside. There is, therefore, the positive certainty, not only that every one of these cases was a genuine case of pneumonia, but that no other cases of the disease but what are tabulated were treated by me during the period referred to. It should be explained, however, that a few cases were partly treated by my colleagues, either before I assumed duty or after I left it, in the too frequent rotations which occur among the clinical professors in this University. Such cases are not inserted. It is also necessary to point out that two or three cases brought into the house by the police in an exhausted condition died before I saw them, and are also not inserted. It is the more important to refer to such occurrences, because they serve to account for the differences which must always exist between general hospital and clinical statistics. Every hospital physician must be aware that the general records of the house afford no index whatever to the number of cases of acute pneumonia treated clinically, comprehending as they do not only consecutive, latent, and chronic pneumonias which have entered in a dying condition and have not been treated at all.

1. The first great fact which the preceding figures serve to establish is, that a simple primary pneumonia, whether

single or double, if treated by the restorative plan is not a fatal disease. Surely one hundred and five cases, of which twenty-six were double, are sufficient to establish this proposition, especially when it is considered that they were diffused over sixteen years, and occurred in all seasons. Amongst these, also, the whole of one lung was involved in no less than fifteen cases, and the symptoms in many of them were exceedingly severe. Neither will any theory as to strength of constitution or change of type in disease explain the result, as several of the cases were those of healthy, vigorous young laborers, whilst others were those of weak and broken-down seamstresses. In any and every case the disease appears to go through its natural progress so long as the body is not too much exhausted, and the physician as early as possible supports it by nutrients and restoratives.

2. As a general rule, prostration and weakening complications or remedies, not only materially lengthen the period of the disease, but especially prolong the convalescence. It is easily understood, therefore, how it happened that the antiphlogistic treatment of former days proved so fatal. The facts collected for me by Dr. Thorburn, from former case-books of the Royal Infirmary, prove that in weak cases a lowering treatment was still employed, though not perhaps to so great an extent as in robust persons.

3. It is generally supposed that the extent of the disease and the amount of lung affected must influence the result and duration of the disease. As to the result, all my cases recovered, even the fifteen cases where the whole of the lung was involved, as well as the twenty six cases where portions of both lungs were affected. In one complicated case, the whole lung on the right side, and two-thirds of the lung on the left side, were simultaneously affected, thus leaving only one-third of a lung to respire with; and yet, without bleeding, and with the aid of nutrients and restoratives, she was convalescent on the fourteenth day, and left the house quite well after a sixteen days' residence. With regard to duration, the extent of the disease does not exert so much influence as is generally supposed. If only a fourth of one lung be affected, the recovery may take place in eight days; but after that, whether the half or the whole of one lung, or two-thirds of both lungs be affected, it does not appear to cause much difference. Cases with half a lung pneumonic recovered in fifteen, with two-thirds of a lung in fourteen, with a whole lung in ten, and with portions of both lungs in fourteen days on the average.

4. Since the observations of Louis, it has been supposed that a pneumonia at the apex of a lung was more fatal and more prolonged than one at the base; and so it may be with an antiphlogistic treatment. But, with a restorative treatment, the preceding facts show that in eleven cases where the disease was confined to the apex, recovery took place in all, on an average, on the thirteenth day.

5. As means of palliating symptoms, and especially pain and dyspnœa, warm fomentations and poultices I believe to be the best and safest. Chloroform has been given by Varentrapp and others with good effect. No doubt also small bleedings, to the extent of eight or twelve ounces, give relief; but in debilitated persons are dangerous, and in all tend, by weakening the strength at a period when the depressed system is struggling to regain its equilibrium, to prolong the convalescence and favor dangerous sequelæ. Still a small bleeding may be employed as a palliative, with caution, to relieve engorgement of the lungs and congestion of the right side of the heart, although it is very rarely required. It should be remembered, in cases of double pneumonia, that there is often great dyspnœa on the sixth or seventh day, which will generally yield to warm poultices locally, and moderate doses of wine.

6. As a curative treatment, I am satisfied that the best plan is rest in bed, nutritive drinks, especially good beef-tea, from the first, assisted by port wine—from four to eight ounces—if the pulse become weak, and solid nutrients as soon as they can be taken. The elimination of the exudation may be further assisted by salines (acetate of ammonia and small doses of tartar emetic—one sixteenth of a grain) and diuretics (nitric ether), although nature will accomplish this herself if the strength of the body be maintained. All active purgatives, contra-stimulants, depressants, anodynes, and lowering remedies of every description should be avoided.

After carefully studying all that has been written on the subject of pneumonia, as well as the numerous statistical tables of the results of various kinds of practice, I can only account for the remarkable success which has followed the restorative treatment in my hands by supposing that acute pneumonia is not a fatal disease, if the strength be supported and there be no complication. The former idea of medical practitioners, that it was a dangerous disorder, and required active depletion and antiphlogistics to prevent its passing into suppurative or fatal stage, was erroneous, and the result

of the imperfect knowledge of pathology which then existed. Suppuration, so far from being fatal, is, as we have endeavored to show, necessary to the resolution of the disease; and a fatal result, so far from being avoided, was produced to the extent of one in every three cases. The late Dr. Todd, while he supported, also stimulated to a great extent, and the result of his practice was a mortality of one in nine cases. In not one of my uncomplicated cases has there, I repeat, been a death for sixteen years, although twenty-six were double cases, and fifteen were cases in which the whole lung was involved. Why, therefore, any such case should have died in the practice of Dr. Todd, I can only ascribe to unnecessary stimulation, as that seems to be only point in which his practice differed from it.

In an able article in the *British and Foreign Medico-Chirurgical Review* for July, 1858, it was endeavored to be shown, from the contrary results obtained by statistics, that the result was governed by hygienic laws or peculiarities such as age, season, climate, etc. I consider that my cases prove the fallacy of such reasoning; and that, looking at the time over which they extend, as well as all the other circumstances which are adverted to, it might easily be shown that the uniform good results in my uncomplicated cases depend on some other cause. That cause, I can have no doubt, is simply supporting the patient by nutrients and restoratives from the commencement. It is the want of that support which explains mortality in the practice of those who, while they do not actually lower their patients, fail to see that, in a certain proportion of cases, either the disease itself or excessive stimulation exhausts and proves fatal.

The facts on which, what appear to me these important conclusions rest, I hope to lay before the profession ere long in a more extended form.

SMOKING AS A CAUSE OF FATTY HEART.

Dr. Henry Kennedy, in a paper read before the Surgical Society of Ireland, on fatty heart, makes the following observations on the influence of tobacco-smoking in its production:

"I must notice one (cause of this disease) which has year after year been gradually forcing itself upon my attention,

till it has now reached the strongest conviction in my mind—I mean the habit of smoking, which, I believe, I have traced in many instances to have been the predisposing cause of the disease. No one is more aware than myself of the difficulties which beset a question of this sort, nor the great opposition which, for obvious reasons, it is likely to meet. Still, the opinion has not been taken up hastily, nor, as I think, without such proof as the subject admits of. All will recollect that within a very few years a great paper war was carried on in the pages of the *Lancet* on the effects of tobacco, and the opinions expressed were sufficiently contradictory. Amongst them all, however, I did not observe one point noticed which seems to my mind of great importance in this question. It is the fact that any one, no matter what his temperament may be, gets out of health, so that the powers of his system are lowered, he must then either lessen his smoking or give it up entirely. I have met no exception to this statement, which every one may test for themselves—as, for instance, in cases of paralysis, no matter how slight they may be. From the fact, however, I conclude that tobacco, besides other effects, is a depressor on the nervous system, and that there is a constant antagonism going on between it and the healthy state of the constitution, and when used too freely it ultimately engenders a state of health which is very apt to be followed by a fatty heart. At any rate, whatever the explanation be, the fact is as stated above, and I have seen now too many cases of fatty heart, in what are called heavy smokers, to have any doubt on the matter.

"This day, 4th March, a case which strongly confirms some of the remarks just made came under my notice, and for the third time. The patient, aged 34, is a man of full height, made in the very finest proportions, and remarkable, or at least was, for great physical strength and activity. He has always been strictly temperate as regards strong drink, but is the heaviest smoker I recollect to have met. About three months since he began, and without any cause he could discover, to lose flesh and strength very rapidly, and his wind as he called it, became so short that he was compelled to give up active exercise. He now looked pale and depressed, having had a cold, which he found it hard to shake off. He told me he had, at my wish, twice tried active exercise since I last saw him. On the first trial he got through it but badly; on the second he was forced to give it up, as his breathing became so hurried and his heart beat so violently. It seems

scarcely necessary to add that he had been driven to give up his darling tobacco.

"Except the pulse, there is nothing in this case to indicate disease. The two sounds of the heart are distinct and unattended by murmur. There is no increase of dull sound on percussion, nor can I say that the impulse varies from health. Whilst he sits, however, the pulse beats but forty-eight in the minute, and it was just the same from the first time I saw him. It is large and full to the finger, under which it passes slowly, and is readily compressed. Any movement at once increases the beats, and more than occurs in a healthy state.

"Now, in this case I have scarcely a doubt that the heart has become fatty, and most probably in the worst form: I mean where the muscle itself has degenerated. Yet, he tells me, he passed a physician and had his life insured just five months since!"—*Dublin Medical Press.*

PERMANGANATE OF POTASH AS A REMEDY FOR DIPHTHERIA.

By LOUIS MACKALL, Jr., M. D., Georgetown, D. C.

Having used for several months past the permanganate of potash as a remedy for diphtheria, and being convinced of its great efficacy, I feel justified in calling the attention of the profession to the use of this agent in this fatal and hitherto unmanageable disease.

After using faithfully all the remedies both general and local which have been extolled for the cure of diphtheria, and having seen so little good result from their use, I had lost in a great measure all faith in such remedies, and had come to the conclusion that the best treatment was to support the patient with nourishment and the free use of stimulants. On reading, in the January number of the *American Journal*, an article by Dr. Samuel Jackson, on the therapeutical application of a solution of the permanganate of potash and of ozone, it occurred to me that this agent might be beneficial in the treatment of diphtheria. Shortly afterwards I had an opportunity of making a trial of it in a severe case. A young girl about eleven years of age was seen by me after

being sick several days. The tonsils, soft palate and fauces were covered with an ash-colored deposit; the glands beneath the jaw were much swollen, with frequent pulse and hot skin; she was treated for several days with chlorate of potash and the tincture of the chloride of iron. Muriatic acid and tincture of iron in equal parts, were applied locally. But finding the disease on the increase, I changed this treatment and used the permanganate of potash, both internally and as a local application, the latter in the proportion of ʒj to water Oj. She took a teaspoonful every three hours of the strength of ʒj to water Oiss. On the second day after commencing this treatment, the improvement was very marked, and she speedily recovered. The false membrane was detached and the mucous membrane presented a healthy appearance in three or four days.

Since then I have treated all the cases of diphtheria (some fourteen or fifteen) which I have seen with this agent, and am more and more convinced with every case, that we have in the permanganate a most valuable remedy. Such is my faith in its power to arrest the extension of the pseudo-membranous formation, and to remove it when formed, that I now feel little apprehension in any case if called to see the patient before the disease has extended to the larynx or paralysis has occurred. Indeed, in those almost hopeless cases in which it is evident that the disease has reached the larynx, as shown by suppressed cough and voice with paroxysms of intense dyspnœa, I have seen under its use three children recover. With a considerable experience in the disease, I had previously known only one child to recover under similar circumstances. These three cases were all of the most unfavorable character; the membranous formation was abundant; the laryngeal symptoms very distressing. In all of the cases I expressed a very gloomy prognosis, as all similar cases with the one exception above mentioned had proved speedily fatal. In these cases I also used emetics, but I think the successful result should be attributed to the permanganate, as I had used emetics in all such cases before without benefit.

When the disease has extended beyond the reach of this remedy locally applied, of course a successful result could not reasonably be expected from its use; but I believe that with this agent we can prevent diphtheria from progressing to a fatal termination, provided the cases can be attended to before the larynx becomes involved.

It tendency to attack the mucous membrane of the pharynx

prior to its extension to the larynx is characteristic of diphtheria, and I feel assured from my experience that if the permanganate of potash is used in this stage, that it will not only control its further development but will speedily remove all traces of the disease by restoring the mucous membrane. of the throat to a healthy state.

The inferences that it is intended should be drawn from the foregoing remarks are: that if diphtheria arises from a specific cause affecting the whole system, then the permanganate of potash may be regarded as the antidote to this poison; or if the fatal tendency is thought to be caused by or to be dependent on the local affection of the throat, then the local affection may be removed and the fatal tendency may be obviated by the use of this remedy.

It may be well to state that I have never seen any unpleasant effect from the use of the permanganate even when administered to young infants (the solution should be weakened by increasing the quantity of water to Oij to permanganate ʒj in very young children); and I have observed that when locally applied it causes less distress than almost any other remedy.

Georgetown, D. C., Oct. 22d, 1864.

PERMANGANATE OF POTASH IN GONORRHŒA.

Dr. J. G. Rich, of Beachville, Canada West, states (*Canada Lancet*, July 15, 1864,) that he has frequently employed, during the past two years, the permanganate of potash as an injection for gonorrhœa, and with the most satisfactory results, in some cases having effected a cure in forty-eight hours.

His usual mode of treatment is as follows: "℞—Potassæ bitart. ʒj; Podophyllin, gr. j.—M. In chart. No. IV. divid. S. One every two hours until free catharsis is produced.

"After which, ℞—Potassæ permangan. gr. vj; Aquæ fontan. ʒj.—M. S. To be used as an injection three times a day.

"I direct at the same time the free employment of mucilaginous drinks, as althæa, ulmus, acacia, etc., and put the patient upon a non-stimulating regimen.

"Out of sixty-four registered cases this treatment has failed in but two instances. And I find that recent attacks usually

become arrested by it after from three to six injections. I have found it advisable to continue the demulcents for at least a week after the cessation of the discharge. In none of all these cases was the injection continued after the fourth day.

"When accompanied by chordee, I usually employ the following: ℞—Lupulin, ʒj; Micæ panis, q. s.—M. Ft. mass. in pilulus xvi, dividenda. S. Two, three, or four on going to bed."

PERSULPHATE OF IRON IN HEMORRHOIDS.

Dr. Geo. S. Cartwright, Asst. Surg. U. S. V., highly extols (*Cincinnati Lancet and Observer*, May, 1864,) the efficacy of the persulphate of iron employed as an ointment in the treatment of hemorrhoids. It is especially beneficial, he states, in ulcerated hemorrhoids; or in those whose constitutions are debilitated from diarrhœa, long marches, and excessive fatigue of any kind.

Of several cases which he relates illustrative of the advantages of this remedy, we select the following:

"Major ——, U. S. A., of full habit, has been the subject of slight hemorrhoids for several years. For the last twelve months, has been obliged to travel a greater part of the time in a rough vehicle. Applied to me December 5th, 1863. On examination, found a small tumor, external to the sphincter, about the size of a large pea; when at stool it would protrude to the size of a small walnut, and would with difficulty be returned.

"*Treatment.*—Lead water freely applied to the part, and ℞ ferri persulphas. ʒss., cerate simplex ℥j. Rub well together and apply on retiring at night. The effect of the persulphas was almost immediate, relieving pain and cauterizing the part.

"I would state that he had previously used ointment of galls, tannin, opium, etc., with only a temporary relief. The effect of the persulphas is permanent, and in the above case he was able to ride on horseback, or take active exercise, within two weeks after commencing the use of the iron, without the least inconvenience. It is now two months since he first commenced the use of it and has not had any return since."

Dr. C. sometimes employs the ointment with double the proportion of the persulphate used in this case.

HINTS FOR THE TRAVELING SEASON.

At this season many persons contemplate traveling; to do so with the largest amount of comfort and advantage, physical, social, and mental, the following suggestions are made:

Take one-fourth more money than your actual estimated expenses.

Acquaint yourself with the geography of the route and region of travel.

Have a good supply of small change, and have no bill or piece higher than ten dollars, that you may not take counterfeit change.

So arrange as to have but a single article of luggage to look after.

Dress substantially; better to be too hot for two or three hours at noon, than to be too cool for the remainder of the twenty-four.

Arrange, under all circumstances, to be at the place of starting fifteen or twenty minutes before the time, thus allowing for unavoidable or anticipated detention on the way.

Do not commence a day's travel before breakfast, even if that has to be eaten at daylight. Dinner or supper, or both, can be more healthfully dispensed with than a good warm breakfast.

Put your purse and watch in your vest-pocket, and all under your pillow, and will not be likely to leave either.

The most if not secure fastening of your chamber-door, is a common bolt on the inside; if there is none, lock the door, turn the key so that it can be drawn partly out, and put the wash-basin under it; thus, any attempt to use a jimmy or put in another key, will push it out, and cause a racket among the crockery, which will be pretty certain to rouse the sleeper and rout the robber.

A sixpenny sandwich eaten leisurely, in the cars, is better for you than a dollar dinner bolted at a "station."

Take with you a month's supply of patience, and always thirteen times before you reply once to any supposed rudeness or insult, or inattention.

Do not suppose yourself specially and designedly negleted, if waiters at hotels do not bring what you call for in double quick time; nothing so distinctly marks the well-bred man as quiet waiting on such occasions; passion proves the puppy.

Do not allow yourself to converse in a tone loud enough to be heard by a person two or three seats from you; it is the mark of a boor if in a man, and of want of refinement and lady-like delicacy, if in a woman. A gentleman is not noisy; ladies are serene.

Comply cheerfully and gracefully with the customs of the conveyances in which you travel, and of the places where you stop.

Respect yourself by exhibiting the manners of a gentleman and a lady, if you wish to be treated as such, and then you will receive the respect of others.

Travel is a great leveller; take the position which others assign you from your conduct rather than from you pretensions.—*Hall's Journal of Health.*

LONGEVITY.

The following curious facts are gleaned from a work which has just appeared under the title of "*De la Longévité Humaine*," by Dr. Guyétant, who has himself reached the patriarchal age of eighty-eight.

In 1777 the average life in France did not exceed twenty-three years. In 1798 it had risen to twenty-six years and three months. In 1836 it was thirty-three years, and at present it has reached the very high figure of thirty nine, an increase of six years within a period of twenty-eight years. This is evidently owing, first, to the great efforts made of late to remove unsalubrious nuisances, to provide towns with a proper system of sewerage, to drain marshes, etc., and then the great progress made in medicine, and the abundance of wholesome food and every necessary comfort now at the command of all but the hopelessly indigent, who are of themselves the object of much greater solicitude than formerly.—*Med. and Surg. Journal.*

WEAK VISION IN THE AGED.—In the case of aged persons whose sight is becoming enfeebled, and requires the aid of convex glasses, great advantage is derived, supposing no nervous lesion to exist, from painting every evening the eyelids and brow with laudanum, and allowing this to remain all night. So says Prof. Nascar, of Naples.

EPILEPSY, AND THE ADMINISTRATION OF BROMIDE OF POTASSIUM.

By G. GODDARD ROGERS, M. D.,
Physician to the West London Hospital, and late Medical Registrar to St. George's Hospital.

A very interesting paper on the above subject, from the pen of Dr. M'Donnell, was published in the *Dublin Quarterly Review* of February last. It fell under my notice in May, when I was about to give a record of considerable success in the treatment of a case where, all other remedies having failed, I had been for a considerable time trying the bromide of potassium. After reading Dr. M'Donnell's observations, I determined to give the medicine a few months' longer trial before venturing to speak with any confidence as to its efficacy. To my own mind it is satisfactory that so long a time elapsed between the publication of Dr. M'Donnell's paper and my perusal of it. I came to the treatment of the patient mentioned below with an unbiased mind, and with a feeling that I had undertaken an almost hopeless task. I was, however, gratified by a measure of success, and strengthened in my belief that good results were to be obtained from bromide of potassium in certain forms of epilepsy, when my attention was directed to the above mentioned able article. I may just observe that I have given the drug to other epileptic female patients at the hospital with good effect, but the case I now append is the only one I have been able to watch for a prolonged term. Doubtless we are treading on soft ground if, for the present, we adopt Dr. M'Donnell's view, that "each case of epilepsy is in itself a study;" but I trust that ere long so many individual cases will have been observed of epilepsy connected with derangement of the female genital organs, as to enable us to form a group or groups of these affections amenable in a large percentage to a special remedy, even though we may in the present state of our knowledge only rudely conjecture its mode of action. With all deference, I beg leave to suggest that during a certain period—say from January, 1865, to March, inclusive—the various hospital physicians in this metropolis use the bromide of potassium in all cases of epilepsy where there is any rea-

son for regarding uterine disorder as the source of the complaint. If no good result follow, yet no great harm can accrue, and at all events we shall have cleared away an untenable theory. There is true wisdom in the remark of M. Pouchet: "Every idea *à priori*, every hypothesis, is only good, if we accept it with a strong determination of abandoning it if the facts are no longer explicable by its means. Without this, its influence is disastrous."

Case 1. R. B———, aged thirty-four, married, with two children, the youngest eleven years old, first came under treatment at the West London Hospital in May, 1861. About six months after marriage she miscarried, and had for three weeks frequent attacks of syncope, followed a few weeks later by a convulsive seizure, during which she lost her consciousness. She does not remember being told afterwards whether she foamed at the mouth or bit her tongue. These attacks were few in number for some years; but she often had "fainting fits" and "sighing fits," during which she "felt lost"—(*petit mal?*)

In the early part of 1861 the fits recurred more frequently; so that she was obliged to give up her employment as occasional nurse. Feeling low spirited, and despairing of aiding her family, she came to the hospital. She was rather below the middle height, of florid complexion, with a wild staring expression, and very excitable manner. The heart's action was somewhat feeble, the breathing tranquil, and the bowels apt to be somewhat relaxed. Pressure of the crowd in the waiting room, or the anxious struggle to be amongst the first served with medicine after seeing the physician, would sometimes bring on a seizure. One I particularly remember was most violent, and lasted a long time. Although the true fits, or, as she always termed them, the "struggling fits," were principally confined to the pre-menstrual or post-menstrual epochs, yet they occasionally followed coition, as I learned from the husband, who, by the way, has been a noted pedestrian in sporting circles during the past twelve years.

I first gave turpentine and castor-oil draughts; but no worms were dislodged. Bichloride of mercury with bark was next tried; and remembering that valerian had been mentioned by some authorities as putting in a claim for approval, I tried it in many forms—infusion, ammoniated tincture, valerianate of iron, of zinc, and of quinine. Dr. Duncan Gibb, who was about that time my colleague, had been giving the bromide of ammonium to allay irritability and decrease sensi-

bility of the larynx and pharynx prior to using the laryngoscope. Thinking the same drug might act beneficially on the mucous lining of the uterine organs, I administered it freely to my patient; but with no good effect. The same was the case with iodide of potassium; and I then accidentally refreshed my memory by reading Sir C. Locock's paper on the bromide.

From the 21st of November, 1862, to the 3rd December, R. B——— took bromide of potassium in four-grain doses three times a day, with compound tincture of valerian. Between these dates she had two fits of a mild character. The medicine was intermitted until the 9th, when she came in great distress, saying that she was suffering from severe flooding, and had had several violent fits, on one occasion nearly falling into the fire. She was ordered to resume the medicine.

Jan. 2nd, 1863.—To leave off the tincture of valerian, and take ten grains of the bromide in water three times a day.

8th.—Two severe attacks.

16th.—No seizure since last entry.

She now took quinine and ammonia up to March 6th. The seizures were very frequent during a portion of this time, and she suffered severely from menorrhagia.

From the 13th March to 12th May, she took ten grains of bromide three times a day, and much improved. In fact, she relied solely on the medicine, and declared that the fits would return directly she left it off. To test this statement, during the latter half of July, I merely prescribed a placebo of aromatic water; but so great was her distress that she implored me to allow her to resume the original medicine, and during August and September she took fifteen grains of the bromide three times a day. I afterwards increased the dose to a scruple. Beyond this dose I never found occasion to go with the patient, and, from my experience in other cases with larger doses, I am compelled to differ with Dr. M'Donnell when he says that ten grains three times a day is "too small a dose to develop any good result."

In January, 1864, I discharged my patient, she not having experienced a severe fit, or one of the *petit mal* description, for more than three months. She resumed her former work of nursing, and I saw nothing more of her until the 10th of June last, when she came to me complaining of vertigo and "fullness about the throat," the "choking aura," which was the sure precursor of a seizure at a menstrual period. Two

days later the seizure occurred, but it was of a very mild type. I kept her on scruple doses of the bromide up to the 15th of July, seeing her during this time on six occasions. She remained quite free from attacks up to the time of her dismissal in July, and on the 3rd November, I heard that her good health had been uninterrupted. I do not mean to say that she is cured; but in 1861 and 1862, her life was a burden in consequence of frequent attacks, and from these she has enjoyed an immunity for three, four, or five months.

Systematic writers on materia medica have dwelt much on the anaphrodisiac influence of bromide of potassium. I do not think its beneficial influence is to be looked for in a simple lowering of the sexual power. When that power is unduly drawn upon, a degree of irritation is produced which the bromide may calm. But in the case above related, I had the fullest opportunities of learning from the husband that there never had been any diminution in his wife's *empressement*. And to arrive at greater certainty, the husband coming under my care for some trivial ailment during his wife's attendance at the hospital, I took the opportunity of administering the bromide of potassium to him in fifteen and twenty grain doses three times a day. The information supplied after the lapse of a month satisfied me that here, at all events, the depressing propriety of the drug was *nil*. Where there is irritation and frequent priapism, the result of onanism or venereal excess, and where there is every reason to conjecture that such irritation is at the bottom of the epileptic seizures, then the bromide of potassium is, I think, of service. Dr. M'Donnell has promised us some further observations, which it is probable will throw still more light on this important subject.

As confirmatory of the conjecture hazarded above respecting epilepsy in the male subject, I add a few notes of an hospital case, which will bring this paper to an end.

Case 2. E. B——, aged sixteen, came to the West London Hospital in June last. His appearance is heavy, he complains of loss of memory, is partially deaf, and the pupils are much dilated. At twelve years of age, when working in a gun factory, he contracted bad habits, which he has continued to indulge up to the present time. Sometimes he has practised self abuse three and four times a day. The bowels are costive, and there is a feeling of weight at the vertex. Before he was thirteen years of age he had several fits, which his friends describe to me as most severe, his struggles being

extremely violent, and his tongue often bitten through. There was an intermission of eighteen months, followed by a fresh series of fits; and he then went to Salisbury Infirmary. The change of air and the medical treatment effected but little good; and when he returned to London he had "twitchings of the face, and fits almost every day. In June and July he was under my care, and I gave him the bromide three times a day in doses gradually increased to twenty-five grains. The attacks gradually became less frequent; and he was entirely free from them all through August. On the 2nd of September his friends brought him again, as he had suffered from a slight fit during the night. I resumed the bromide; and, after taking it a fortnight, he felt better, and had no "twitchings" and no sign of a fit. Up to the present date, (Nov. 21,) this lad has had no further seizures; and I think it reasonable to regard his improvement as due to the influence of the drug, coupled with obedience to my enjoining a strict abstinence from vicious habits.

Grosvenor street, Grosvenor square.

☞ Dr. E. L. Holmes, Chairman of the Committee on Ophthalmology, Illinois State Medical Society, has called our attention to the fact, that his remarks upon pressure in conjunctivitis, and the use of the muriate of ammonia in iritis, were not included in his Report, as stated in the published transactions of the recent meeting of the Society, but were made informally; full credit for their introduction into use in this country being accorded to Surgeon J. S. Hildreth, of the U. S. Ophthalmic Hospital, Chicago.

EDITORIAL AND MISCELLANEOUS.

AN EXAMPLE WORTHY OF IMITATION.

The Chicago *Republican*, edited by the Hon. C. A. Dana, well known as one of the former editors of the New York *Tribune*, and more recently as Assistant Secretary of War, in the sixth number of its first volume, contains the following praiseworthy announcement:

"IMPROPER ADVERTISEMENTS—*An Effort to Abate an Offence Against Morality and Public Decency.*—After a careful examination of a certain class of advertisements that, we regret to say, have, for the past few numbers, in imitation of a large portion of the secular press, been published in our paper, the publisher has to-day issued an order that hereafter not one single column or line of matter shall be printed upon the pages of the *Republican* as an advertisement, or otherwise, that cannot be perused without a blush by the most refined and sensitive reader.

In adopting this course we appeal to the moral sense of the community for approval and support.

The advertisements that now crowd the "Special Notice" column of our papers are a stench and an abomination in the nostrils of all decent men, and ought to debar the paper that contains them from admission within the pure and sacred precincts of the family circle.

The foul pollution that springs from social crimes should flow off through the deepest and darkest sewers, and not be permitted to run through every public hall and private room and upon the surface of every public avenue. By thus excluding this noxious class of advertisements from the columns of the *Republican* we may diminish somewhat its revenues, but will at least have the satisfaction of printing a paper that can be read without offence by every moral and religious member of society."

Our attention being in this way called to the subject, we have looked over the secular press of this city more attentively

than before, the better to judge of the character of what the *Republican* has determined to exclude; and we will say, we were seldom more surprised than when we read the obscene, disgusting and immoral advertisements that papers claiming to be respectable place conspicuously in their columns. Not to speak of the taste and propriety—what shall we say of the morality—of permitting any of either sex, but especially the young, and the pure-minded females of Chicago, to read the loathsome details found in the advertisements under such heads as "The Key to Love," "Highly important to Married People," "Philosophy of Marriage," "The Young Man's Friend"—the filthy advertisements of those who treat private diseases, and of medicines to re-establish suppressed menstruation, accompanied with an italicized caution to ladies not to use them when there is any suspicion of pregnancy, as they will be sure to produce abortion. Persons thus advertising are known by the conductors of these periodicals to be charlatans and imposters—such medicines are known to be advertised as agents for producing abortion, and yet the spirit of avarice, the greed to add lot to lot and house to house, gives them place. We have known death to follow as the result of using these advertised agents of abortion, and can we hold those who give currency to the advertisement, influenced only by venal motives, as guiltless of the crime? They have no shelter under the published caution against such use of the medicines. As well might one who should furnish something known to be designed for murder or suicide, hope to escape complicity in guilt by labeling the substance poison.

If a sense of propriety, morality and right will not restrain this class of papers, the community should appeal to their pecuniary sensibilities, and demand that such revolting matters should be excluded from their pages, or expel them from the abodes of virtue, to the brothels for which they would seem designed, and where they might be read, if not with approval, at least without a blush.

AMERICAN MEDICAL ASSOCIATION—SIXTEENTH ANNUAL CONVENTION.

We are indebted to the *Boston Medical and Surgical Journal* of June 15th for the following report of the meeting of the American Medical Association:

PROCEEDINGS OF TUESDAY, THE FIRST DAY.

The American Medical Association began its sixteenth annual convention at the State House, Boston, in the Hall of the House of Representatives, on Tuesday, the 6th instant. A large number of delegates and members were present, occupying the entire floor of the hall, while the galleries were occupied by spectators. The officers of the convention were as follows:

President—N. S. Davis, M. D., of Illinois.
Vice Presidents—Wm. H. Murray, M. D., of Ohio; Worthington Hooker, M. D., of Connecticut; William Whelan, M. D., of District of Columbia; J. E. B. Heintze. M D., of Maryland.
Secretary—William B. Atkinson, M. D., of Philadelphia.
Assistant Secretary—Horatio R. Storer, M. D, of Boston.
Treasurer—Caspar Wister, M D., of Philadelphia.

At about half-past ten o'clock, the Convention was called to order, and prayer was offered by Rev. Dr. Lothrop, after which Dr. Henry J. Bigelow, of this city, delivered the address of welcome.

At the close of Dr. Bigelow's address, the roll of registered members was read by the Secretary.

The President then proceeded to deliver the annual address, and a copy of it was requested for publication.

The President read a communication from Mayor Lincoln, inviting the members of the Association to an excursion down the harbor of Boston to-morrow. It was unanimously voted to accept the invitation.

Papers and reports from special committees appointed or continued at the last session, being next in order, were called for, and the following were presented:

On Insanity—Report by Dr. H. R. Storer, of Boston. Referred to the Section on Practical Medicine and Obstetrics

On the Relations of Electricity to the Causes of Disease—Paper from Dr. Littell, of Pennsylvania. Referred to the Section on Practical Medicine and Obstetrics.

On Climatology and Epidemic Diseases of California—Reports by Drs. Logan, of California, and B. H. Catlin, of Connecticut. Referred to the Section on Meteorology and Epidemics.

On Alcohol and its Relations to Man—Report by Dr. G. E. Morgan, of New York. Referred to the Section on Practical Medicine and Obstetrics.

On Autopsies and their Relations to Medical Jurisprudence—Report by Dr. T. C. Finnell, of New York. Referred to the Section on Medical Jurisprudence.

On the Introduction of Disease by Commerce, and the Means of its Prevention—Report by Dr A. N. Bell, of Brooklyn, N. Y. Referred to the Section embracing Hygiene.

On Exsections and their Relation to Conservative Surgery—Papers by Dr. Tewksbury, of Iowa, and Dr. Lyon. Referred to the Section on Surgery.

On Specialists and Specialties—The Committee were requested to report on Wednesday morning at 9 o'clock.

On the Rank of Medical Corps in the Army—Report by Dr. Triplet, U. S. A. Referred to the general session of Wednesday.

On the Rank of Medical Corps in the Navy—Report by Drs. Anderson, of New York, and others. Referred to the general session of Wednesday.

On Smallpox—Papers by Drs. Ramsey, of New York, and Nebinger, of Philadelphia. Referred to the Section on Hygiene.

Volunteer communications were then called for, and the following papers were presented:

On Ophthalmology—By Dr. Williams, of Cincinnati. Referred to the Section on Surgery.

Extraction of Foreign Bodies from the Ear and Nose—By Dr. Turnbull, of Philadelphia. Referred to the Section on Surgery.

On Staphyloraphy—Dy Dr. J. Mason Warren, of Boston. To be read at 8 o'clock P. M., on the 7th, at the Medical College.

On Surgery—By Dr. Henry J. Bigelow, of Boston. To be read at the Medical College at 4 P. M., of the 7th.

On the Functions of the Nerves of Sensation and Motion—By Dr. Haskell, of Rockport. Referred to the Section on Anatomy and Physiology.

On Dislocations of the Clavicle—By Dr. Holton. Referred to the Section on Surgery.

Dr. W. Marsden, President of the College of Physicians and Surgeons of Lower Canada, was introduced and made a brief address.

It was voted that a committee to nominate officers, consisting of one from each State, be appointed by the various delegations.

At fifteen minutes before two o'clock the Convention adjourned.

In the afternoon the several sections organized by the choice of chairmen and secretaries, and proceeded to the consideration of the reports and papers referred to them.

Soiree and Promenade Concert at the Music Hall.—In the evening the members of the Convention attended a soiree at the Music Hall, tendered to them by their professional brethren of Boston, and a few hours were most agreeably spent in social intercourse.

PROCEEDINGS OF THE SECOND DAY.

The second day's session of the Association was opened at 8:20 A. M., by the President, Dr. N. S. Davis, of Chicago.

Permission was given the committee on nominations to retire for consultation at 9 o'clock. The roll of the additional delegates registered since yesterday's session of the Association was read by the Secretary. The number present was then announced to be 468.

Dr. Cox, of Maryland, offered a preamble and resolution, which were amended and adopted in the following form:

Whereas, Montrose A. Pallen, whose name appears upon the register as a permanent member of this Association, has been declared, under oath, before the military commission sitting at Washington at this date, to have been in complicity with an attempt to poison the Croton Reservoir, by which the city of New York is supplied with water—thus imperilling the lives of thousands of his fellow-citizens, therefore

Resolved, That the said Montrose A. Pallen has disgraced his manhood and the humane profession of which he is an unworthy member—that he is hereby indignantly expelled from this body—that the Secretary be required to strike his name from the roll of members.

Dr. Ordway, of Boston, subsequently presented a remonstrance, signed by about thirty members, against the action of the Association. Upon which a committee of three was appointed to prepare an answer to the paper. This committee made an elaborate report, sustaining the action of the Association.

It was voted that the final meeting of the Association shall begin on Friday morning at 9 o'clock.

A series of resolutions, offered by Dr. Garrish, of New York, of respect to the memory of the late Dr. Valentine Mott, were adopted by the Society.

On motion of Dr. Catlin, of Connecticut, a committee was appointed to prepare suitable resolutions on the death of Dr. Jonathan Knight, Dr. Benjamin Silliman, and Dr. Charles Hooker.

Reports and papers from special and other committees were next in order, and the following were presented:

On the Rank of Medical Corps in the Army—Report by Dr. Tripler, U. S. A. Accepted and adopted. On motion of Dr Cox, of Maryland, a resolution was adopted that the committee be continued, and that each member of this Association use his personal effort with members of Congress to secure a more elevated grade for the entire medical corps in the Army

On motion, it was voted that the report of the committee and the subject discussed therein be presented to the next Congress by the President of this Association.

On the Rank of Medical Corps in the Navy—Report by Dr. James Anderson, of New York, read by the Secretary. Accepted and adopted.

On motion, it was resolved that the committee be continued, and that the same course be taken with this report by the President as was voted to be taken with the report from the medical corps in the Army.

The report of the Committee on Publication was submitted by Dr. F. G. Smith. Appended to the report was a resolution authorizing the committee to invite each member to contribute such additional sum as will enable them to defray the expense of publishing the forthcoming report, provided the amount in the hands of the treasurer shall prove to be insufficent for the purpose.

The report of the Committee on Prize Essays was submitted by Dr. D. H. Storer, of Boston. It was announced that a prize had been awarded to the author of the dissertation on the "Surgical Treatment of Morbid Growths in the Larynx, bearing the motto "*quod vidi scripsi.*" On opening the envelope bearing the corresponding inscription, the author was announced to be Dr. Louis Elsberg, of New York.

The premium offered at the last annual meeting for "the best short and comprehensive tract calculated for circulation among females," on Criminal Abortions, was awarded to Dr. H. R Storer, of Boston.

The Report on Medical Education was submitted by Dr. Antisell. Referred to the Committee on Publication.

The Report of the Treasurer was submitted, showing the amount in the treasury to be $301.95.

A paper on "Compulsory Vaccination" was referred to the Committee on Medical Jurisprudence.

The report of the Committee on Revision of the Constitution was submitted by the President of the Association, Dr. Parsons occupying the chair temporarily. The report was accepted and adopted, and the thanks of the Association were voted to the Committee for the satisfactory manner in which they had discharged their duty.

The report of the Committee on Necrology was submitted without reading, and referred to the Committee on Publication.

The Nominating Committee reported a resolution that the several sections shall select the subjects germain to their organizations, and also appoint the committees thereon.

Dr. Toner, of Washington, offered an amendment to the Constitution, that delegates on registering their names shall pay the sum of $5.00, and permanent members, $3.00 The amendment, according to the Constitution, lies over until next year.

The Committee on Nominations, through their chairman, reported that they had decided upon Cincinnati, Ohio, as the next place of meeting of the Association. Dr. Cox, of Maryland, offered an amendment, substituting Baltimore, Md., for Cincinnati, Ohio. A spirited debate followed, and at length the motion to amend was carried, and Baltimore decided upon as the next place of meeting.

A committee was appointed to draw up a series of resolutions on the death of Dr. S. D. Willard, late Secretary of the New York State Medical Society, and also to prepare a short biographical sketch of his life, both to be submitted to the Committee on Necrology.

The Association adjourned at 2 o'clock.

PROCEEDINGS OF THE THIRD DAY.

The Convention was called to order at 8½ A. M., by the President.

On motion of Dr. Burns, of Pennsylvania, a resolution was adopted requesting the sections or committees to which papers had been referred, to use special judgment and discretion in assigning such papers to the sections to which they properly belong, and in selecting such as they may consider worthy of publication.

On motion of Dr. Maybury, of Pennsylvania, it was

Resolved, That the Permanent Secretary be instructed to prefix to the List of Officers and Permanent Members, a list of Ex-Presidents and Ex-Vice Presidents of the Association.

Dr. Jarvis, of Dorchester, inquired concerning the functions of the Committee on Publication. A discussion on this question followed, in which the President, Drs. Jarvis, Sayre of New York, Tripler and Hillard participated. By a vote of 45 to 37, a resolution was adopted giving the committee discriminating power.

On motion of Dr. Jarvis, of Dorchester, it was voted to establish a section on Psychology.

Dr. Garrish, of New York, moved that a section on Ophthalmic Medicine be established.

Dr. Twitchell, of New Hampshire, favored it. Dr. Williams, of Cincinnati, also favored the establishment of such a section, as there was need for thorough investigation of a science which had in the past ten years become, as it were, new, all the old landmarks having been swept away. The motion was opposed by Dr. Burns, of Pennsylvania, Dr. A. H. Stevens, of New York, and others. It was finally rejected.

On motion of Dr. Hibberd, of Indiana, the section on Anatomy and Physiology was abolished, the subject of Anatomy being assigned to the surgical section, and that of Physiology to the section on hygiene.

A resolution was offered by Dr. Couper, of Delaware, and read by Dr. Tripler, of the United States Army, that this Society send a delegate annually to the convention of medical superintendents of insane establishments, and that efforts be made to cause a more intimate relation between the two organizations; the delegate to be selected by the President. Amendments to the Constitution, to be acted upon at the next annual meeting, were offered in relation to permanent members, delegates from local societies, and members by invitation.

The Committee on Nomination reported that the time of the next meeting shall be in June, and submitted the following list of officers:

President, Dr. D. H. Storer, of Massachusetts; *Vice-Presidents*, Drs. James F. Hibberd, of Indiana; S. O. Almy, of Ohio; T. C. Dunn, of Rhode Island; W. P. Johnson, of the District of Columbia; *Assistant Secretary*, Dr. J. E. Morgan, of Maryland.

Committee on Arrangements, Dr. C C. Cox, W. C. Van Bibler, Franklin Donelson, L. H. Steiner, George G Miltenberger, William Whitridge, J. E. Morgan, all of Baltimore.

Committee on Publication, Drs. F. G. Smith, of Pennsylvania; H. F. Askew, of Delaware; William Mayburry, of Pennsylvania; W. B. Atkinson, of Pennsylvania; H. R. Storer, of Massachusetts; Caspar Wister, of Pennsylvania.

Committee on Prize Essays, Drs. Austin Flint, senior, James R. Wood, Ellsworth Elliot, E. Krackowitzer, D. C. Enos, all of New York.

Committee on Medical Education, D s. S D Cross, of Pennsylvania; G. P. Twitchell, of New Hampshire; C. A. Pope, of Missouri; O. W. Holmes, of Massachusetts; Graf on Tyler, of District of Columbia.

Medical Literature (present committee continued over). Dr. Charles A. Lee, of New York; T. F. Rochester, of New York; C. C. Cox, of Maryland; Albert Smith, of New Hampshire; A. Nebinger, of Pennsylvania.

Committee on American Necrology. Drs. C. C. Cox, of Maryland; E. B. Stevens, of Ohio; W. F. Peck of Iowa; H. Van Dusen, of Wisconsin; Noble Young, of the District of Columbia; Josiah Simpson, of the United States Army; J. C. Weston, of Maine; Henry Bronson, of Connecticut; Henry Noble, of Illinois; Charles Eversfield, of the United States Navy; William B. Fletcher, of Indiana; I. C Hupp, of Western Virginia; J Maurran, of Rhode Island; William K. Bowling, of Tennessee; J. P. Fitch, of New Hampshire; James Couper, of Delaware; W. L. Linton, of Missouri; Chas. L. Allen, of Vermont; H. G. Clark, of Massachusetts; J. H. Griscom, of New York; E. M. Moore, of New York; Charles A. Logan, of Kansas; William B. Little, of California; Stuart, of Minnesota; Henry Miller, of Kentucky; S. G. Armor, of Michigan; William Pierson, of New York; Fleming, of Pennsylvania; E. Wallace, of Pennsylvania.

The report was adopted as a whole, with the exception of the time of holding the next annual meeting. It was voted to meet on the first Tuesday in May, 1866, instead of June.

Dr. Hooker, of Connecticut, from a special committee, reported the following resolutions on the death of Dr. Knight, Dr. Charles Hooker and Dr. Benjamin Silliman, all of Connecticut. The report was accepted and the resolutions adopted.

Resolved, That in the death of Dr. Jonathan Knight, twice a President of this Association, the duties of which office he discharged with extraordinary ability, the Medical Profession has lost one of its brightest ornaments; an eminent Surgeon who was conservative in the true sense of that term; a teacher, who by his transparent clearness and terse eloquence, unsurpassed among medical men in this country, exerted through fifty years a wide influence upon the character of the American medical mind; a Christian gentleman, whose genial qualities won for him, to an extent seldom witnessed, the affections not only of intimate friends, but of all those who knew him

Resolved, That in lamenting the sudden departure from this life of Dr. Charles Hooker, at the height of his usefulness, we cherish the memory of one whose independent mind, restless activity of Christian faithfulness obtained for him great eminence, both as a physician and a teacher of medicine; and we call to mind with special pleasure his earnest devotion from the outset to the interests of this Association.

Resolved, That we revere the memory of Professor Benjamin Silliman, who, as a leader in the diffusion of science in this country, and in other countries also, was one of the great benefactors of the race, and who by his urbanity, kindness of heart, and cheerful piety, enhanced to an uncommon degree his influence upon the community as a man of science.

Dr. Furman, of New York, presented resolutions adopted by the State Medical Society of New York, and referred to the National Medical Society, against newspaper advertising, except merely the card of the physician. The resolutions were laid on the table, to be taken up after the reading of the report of the committee on specialties and specialists, which was specially assigned for this time.

Dr. Julius Homberger, of New York, chairman of the committee on specialties and specialists, presented an elaborate individual report favoring advertising by specialists and opposing the same course by general practitioners. The report was laid upon the table for the present, and a second report was submitted by Dr. H. R. Storer, of Boston, also a member of the committee, defending specialists, placing them in a high position. He presented strong arguments concerning the benefits and advantages of special investigations both to practitioner and patient.

Dr. D. Humphreys Storer spoke concerning a passage in the report relating to himself, denying that he was ever a specialist, though he did not object to any person being a specialist. Dr. H. R. Storer, in reply, defended his own ground. The report was laid upon the table temporarily.

Dr. W. Hooker, of Connecticut, another member of the committee, reported that he had not had sufficient time to

investigate the report of Dr. Homberger, and therefore could not give an opinion concerning it. With the report of Dr. H. R. Storer he could not entirely agree, especially in that part of the report which referred to specialists as the leaders of the profession.

The reports were then taken from the table for consideration.

Dr. Martin made a motion that the reports be referred back to the committee for consideration another year, and supported his motion at some length.

Dr. Bissell, of New York, moved to amend the previous motion, and moved that the reports be referred to the committee on medical ethics.

Dr. Toner, of Washington, criticized the reports in a severe manner.

Dr. Homberger, of New York, defended his position, and stated as the reason why he did not send his report to the other members of the committee at an earlier date, that he knew they would not agree with him and would not sign it. His remarks were not received very favorably by the members.

Dr. Mayburry, of Pennsylvania, favored strongly the referring of the reports to the committee on medical ethics.

The question was then taken on referring the reports to the committee on ethics, and decided in the affirmative. On motion of Dr. Twitchell, of New Hampshire, the committee on ethics was instructed to report some definite action on this subject.

The Convention adjourned at half past twelve o'clock.

The afternoon was devoted to an excursion down the Harbor to Deer Island and Fort Warren. The company disembarked on Long Island, where a collation was served; after which speeches, by His Honor the Mayor and members of the Association, were made.

PROCEEDINGS OF THE FOURTH DAY.

The Association was called to order at nine o'clock by the President. Reports from sections were received and appropriately referred, and it was voted that such bills as might be presented therein should be paid by the treasurer of the Association. After the transaction of some unimportant business, Drs. Leidy, F. G. Smith and H. Hartshorn were appointed a committee on the paper of Dr. Colt, on "the microscope."

At this point, His Excellency the Governor of the Commonwealth, preceded by the Sergeant-at-Arms, and accompanied by Assistant Surgeon General Hooker, entered the hall, and was received by the Association, the members rising in their seats.

A special committee on insanity was appointed, consisting of Drs. Alfred Hitchcock, of Massachusetts; Isaac Ray, of Rhode Island; S. H. Tewksbury, of Maine; B. F. Barker, of New York; and J. S. Butler, of Connecticut.

The Secretary read the following resolution offered by Dr. Garrish, of New York:

Resolved, That the American Medical Association, with heartfelt and national pride, extend to the Army and Navy Surgeons their thanks for the prompt manner in which they have met the calls and perils of the battle-field, demanded by our country.

Resolved, That we tender to the families and friends of those who have sacrificed their lives in the cause of humanity, our earnest sympathies for the bereavement they have sustained. They have restored to us and the whole nation a peaceful and happy home for all future time.

The resolutions were adopted.

On motion, the duty of revising the list of permanent members for republication was referred to the committee on Medical Necrology.

Dr. Burns, of Pennsylvania, presented the following resolutions, which were unanimously adopted:

Resolved, That the American Medical Association, in closing their annual session in the city of Boston, June 9th, 1865, do most sincerely tender a vote of thanks to their medical brethren, the Governor of Massachusetts, city authorities and inhabitants of Boston, for their very kind and generous hospitalities to the assembled delegates from all parts of our country; and in bidding them farewell we shall ever cherish the remembrance of their kindness, and express the hope that prosperity, with every domestic, social, intellectual and religious blessing, may be their abiding portion.

By Dr. Kennedy, of New York, resolutions were offered as follows:

Resolved, That the thanks of the American Medical Association be and are hereby tendered to His Honor Mayor Lincoln and the authorities of the city of Boston for the kind reception and splendid entertainment given to the Association during their stay in the city.

Resolved, That the thanks of the Association are due, and are hereby presented, to the committee of arrangements of the Association for the faithful and satisfactory manner in which they have discharged the arduous duties imposed upon them.

Resolved, That the thanks of the Association be presented to our President, Dr. N. S. Davis, for the singularly able and impartial manner in which he has discharged the duties of his office.

The following was offered by Dr. VanKleek, of New York:

Resolved, That this is a National Association, and as, in its earlier days, we enjoyed with pleasure and profit the intercourse of our professional

brothers of all parts of our country, and as the unhappy feud which for four years divided the nation, has now ceased and peace has again come, we trust forever,—so we hope soon again to meet our members and delegates from the South on this platform of fraternization, and to this end we extend to them an earnest invitation and promise them a cordial welcome.

The following by Dr. Bowditch was offered by Dr. Hibberd:

Resolved, That this Association has learned with deep regret that there are fears of famine, and consequent disease and pestilence, occurring in some parts of Georgia and South Carolina, passed over by Gen. Sherman's army in its victorious course.

Resolved, That this Association would urge upon the Sanitary and Christian Commissions to send agents to learn the exact facts, and, if need be, to take prompt and efficient measures to prevent or mitigate such a distressing result.

The following was offered by Dr. Bronson:

Resolved, That the thanks of this Association be and they are hereby tendered to Major John Morrisey, the Sergeant-at-Arms of the Massachusetts Legislature, and his assistants, for the very able and efficient manner in which they have performed the functions of their offices during the sessions of the Association.

The resolutions were all unanimously adopted.

At a quarter past one o'clock, the Convention adjourned to meet on the first Tuesday in May, 1866, in the city of Baltimore.

The annual meeting of the Association of 1865 has been more largely attended than on any previous occasion, six hundred and sixteen members and delegates having registered their names on the books of the committee. It is generally regarded as having been a most interesting and successful Convention.

PROCEEDINGS OF THE DE WITT COUNTY MEDICAL SOCIETY.

Reported by C. GOODBRAKE, M. D., Secretary.

The Society met in annual session at the office of Dr Madden, in Clinton, on the 3d day of April, the President, Dr. Hunt, in the Chair.

The Secretary being absent, Dr. Goodbrake was appointed Secretary *pro tem.*

The minutes of the last meeting were read and approved. The election of officers being in order, the following gentle-

men were elected for the ensuing year: *President*, Dr. J. H. Tyler; *Vice President*, Dr. Z. H. Madden; *Treasurer*, Dr. J. B. Hunt; *Secretary*, Dr. C. Goodbrake. *Censors*, Dr. J. J. Lake, Dr. W. W. Adams, Dr. Thos. W. Davis.

Delegates to the Illinois State Medical Society—Dr. Benj. S. Lewis, Dr. David W. Edmistan, Dr. Joseph H. Tyler.

Delegates to the American Medical Association—Dr. W. W. Adams and Dr. Christopher Goodbrake.

The President elect, Dr. Tyler, on taking the Chair, made a few very happy remarks upon the importance of keeping up County Medical organizations; and his arguments proved very conclusively that Medical Associations were productive of great benefit, both to the profession and the public.

On motion, Cerebro-Spinal Meningitis was chosen as the subject for discussion at the next meeting.

Drs. Madden and Adams were appointed to write essays to be read at the next meeting.

On motion, the Secretary was ordered to furnish copies of these proceedings to the Chicago MEDICAL JOURNAL and the Chicago *Medical Examiner* for publication.

On motion, the Society adjourned to meet in quarterly session at Clinton, on the first Monday of July next.

This was a successful effort to revive the Society, which, since the war, had only met at irregular intervals. But we now look forward again to full and beneficial meetings, such as we were wont to have in days gone by.

Our Society, we believe, can boast of having furnished as large a quota for the service of our country as any other association having no more members. Dr. Evan Richards served two years and six months, and was killed at the battle of Raymond, Miss. He had attained to the rank of Lieutenant Colonel, and was at the time of his death in command of the 20th Ill. Inf. He was a brave soldier, and a "thorough read" and careful practitioner of medicine. In his death this Society lost one of its best members. Dr. B. S. Lewis was a Captain, and commanded a company in the 107th Ill. Inf., until he was compelled to resign on account of physical disability. Dr. Goodbrake served three years and four months as Surgeon of the 20th Ill. Inf., and Surgeons Wright, Ross, R. T. Richards, and Shurtleff are still in the service; but from present indications we have strong hopes that they will soon be permitted to return to their peaceful homes, and rest from their arduous duties in the field. Would it not be grand if they could all meet with us at our meeting in July next?

Rush Medical College,

Nos. 87 and 89 North Dearborn, cor. of Indiana St.,

CHICAGO, ILLINOIS.

The Twenty-Third Annual Course of Lectures will commence on Wednesday, October 4th, 1865. The public Introductory Address will be given at 8 o'clock in the evening of that day, in the lower Lecture Room of the College.

FACULTY.

DANIEL BRAINARD, M. D., PRESIDENT, Professor of Surgery and Clinical Surgery. Office, 45 South Clark Street.

JAMES V. Z. BLANEY, M. D., Professor of Chemistry and Pharmacy.

J. ADAMS ALLEN, M. D., LL.D., Professor of Principles and Practice of Medicine and Clinical Medicine. Office, N. E. corner of Clark and Washington Streets.

J. W. FREER, M. D., Professor of Physiology and Surgical Pathology. Office, N. W. corner Lake and Clark Streets.

DELASKIE MILLER, M. D., SECRETARY, Professor of Obstetrics and Diseases of Women and Children. Office, 190 South Clark Street.

EPHRAIM INGALS, M. D, TREASURER, Professor of Materia Medica and Medical Jurisprudence. Office, 190 South Clark Street.

R. L. REA, M. D., Professor of Anatomy. Office, 119 South Clark Street.

E. L. HOLMES, M. D., Lecturer on Diseases of the Eye and Ear. Office, 169 S. Dearborn Street.

I. P. LYNN, M. D., Demonstrator of Anatomy. Office, 119 South Clark Street.

CHARLES KEIL, Janitor.

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The Alumni of this, and the graduates of other respectable Colleges, will be permitted to attend the whole or any part of the courses of Lectures, by calling on the Secretary and procuring the Matriculation ticket.

For further information, address the Secretary,

DR. DE LASKIE MILLER,
P. O. Drawer 5787.

CHICAGO

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ORIGINAL COMMUNICATIONS.

ON THE TREATMENT OF DYSENTERY.

By Dr. D. B. TRIMBLE, of Chicago, Ill.

As the season is approaching when dysentery is generally more or less prevalent, perhaps a few remarks on the treatment of this disease, from one who has had considerable experience with it, may not be unacceptable to the younger readers of the JOURNAL. I am aware that the subject has been very ably, extensively and almost exhaustively treated; nor do I propose to suggest any novel mode of treatment, but simply to state what, in my hand, has been followed by satisfactory results.

As dysentery arises from a variety of causes, and is frequently variously complicated, it is obvious that no exclusive or single mode of treatment (as has been recommended by

some authorities) is applicable to every case; but, to be successful, must be varied according to the symptoms, causes, age and constitution of the patient, and to the concomitant diseases, if any are present.

The epidemic form of dysentery, or rather that produced by epidemic influence, (for I do not know that there is any essential difference in the symptoms, except their greater severity, between the epidemic and other varieties), is the one I shall have chiefly in view in the following remarks.

The first summer that I practiced medicine, (in an agricultural community on the eastern shore of Maryland), the disease prevailed very extensively and in an aggravated form, few families escaping altogether, and in some families all, or nearly all, the members being affected. The symptoms were then—as I have always met with them since, to a greater or less extent in the disease—a frequent and urgent inclination to evacuate the bowels; the discharges being generally composed of mucus of a whitish, coagulated appearance, frequently mixed with blood, and sometimes with bile; sometimes (but generally before I would be called to the case) preceeded by feculent or bilious evacuations. Those cases in which a mucous character of discharges prevailed extensively, or exclusively, were generally the most painful and unmanageable, and I was soon led to look upon a free evacuation of blood in the early stages as a favorable symptom. Accompanying this character of the discharges, there would be tormina and tenesmus, more or less fever, thirst, nausea often, sometimes vomiting, pain in the back, scanty urine, and a dry skin. There was often tenderness of the abdomen, but seldom tumefaction.

In regard to therapeutics, venesection was seldom resorted to; and the few instances in which I did bleed were in persons of good constitutions, in the vigor of life, and where the fever ran high, and in these cases with much benefit. Let me here remark that in regard to blood-letting, I think the tendency, or *fashion*, (for there is a fashion in therapeutics,

as in most other things), is as much to its improper neglect at the present day, as it was too freely resorted to by the physicians of half or even a quarter of a century ago.

At the time of the epidemic under consideration, an excellent physician, then about eighteen years in practice, lived a few miles east of me, and another, who had been a practitioner thirty five or forty years, a few miles to the west. Those gentlemen bled freely, and were very unfortunate in the results of their treatment I remember one family, after having lost two of its members under the depleting mode, in the third case sent for me. I did *not* bleed, and the patient recovered, though apparently as ill as the others. Though there are diseases in which I would resort to venesection, where many physicians of the present day would *not*, yet dysentery is not one of those diseases, except in peculiar circumstances. The disease often produces great debility, and is sometimes prolonged to several weeks, so that it is necessary to economize the strength of the system as much as circumstances will permit; and unless the inflammation of the colon and rectum is of a very active grade, we can generally succeed without it.

From the absence of the bile in the dejections, it was evident that the liver was in a torpid condition, and therefore an agent that would unlock it and enable it to eliminate its secretions was indicated. What could fulfill this indication better than mercury? I therefore generally commenced my treatment with a dose of calomel—eight or ten grains to an adult,—followed, in four or five hours, by one-half oz. or one oz. Ol. Ricini, if the stomach was not irritable, or the fever not very high; but, if this was the case, a saline; and in the event of nausea, an effervescing aperient was substituted. This almost invariably alleviated the sufferings, and frequently was sufficient to effect a cure. But if the disease was not conquered, then I continued the calomel in diminished doses: two grains once in two, three or four hours, combined with one-half or one-quarter grain of opium, and one to two grains

of ipecacuanha, with a view of alleviating the tenesmus and exciting the action of the skin, which, like the liver, is in a torpid state. This plan would be continued for twenty-four or forty-eight hours, when the castor oil would be repeated. When this had produced a free secretion of bile and of perspiration, in the great majority of cases, a cure would be accomplished; but sometimes an irritable state of the bowels would continue after the constitutional symptoms had subsided, as would be indicated by some tenesmus and inclination to stool, with very little discharge. In these cases, I continued the opium and ipecac, omiting the calomel, and substituting, sometimes, one or two grains of plumb. acet. to each dose. The local remedies generally of enemata of some mulcilage, as thin clear starch, in small quantities—about a gill—combined with thirty to sixty drops of laudanum, or its equivalent of sulph. of morphia two, three or four times a day. This was an excellent adjuvant in soothing the bowels by alleviating the tenesmus. I directed small injections, as they caused less irritation, were more likely to be retained, and therefore accomplished the object more perfectly. Warm anodyne, or stimulating embrocations to the abdomen, demulcent drinks, and a bland liquid diet, together with perfect rest, a pure atmosphere, and cleanliness, generally accomplished a cure. In convalescence, I seldom found it necessary to give tonics, or stimulants, though occasionally I had to resort to the latter in cases of great prostration.

During this, my first experience with dysentery, I treated just one hundred cases. Of this number, ten, or just ten per cent., died.

A singular circumstance occurred during the prevalence of this epidemic, which I have frequently noticed since, viz: that the negro race succumb to severe diseases much more readily than the whites. Of those I treated at that time, ten were colored persons; and although they had as much attention as my other patients, and as many comforts and facilities for recovery as many of the whites, yet of this number, five,

or fifty per cent., died; while of the ninety whites treated, but five, or five and six-tenths per cent., died. But among the deaths of the blacks, two were boys, brothers, ten and eleven years old, who had been much emaciated, but were progressing towards health, when their parents yielded to their desire for *green apples*, (which hung, in their view, on a tree by the door,) and after partaking freely of them, they had a relapse, and in a few days died.

Another epidemic—in 1851—occurred while I was in Burlington, New Jersey, and I saw no reason to modify the treatment used in the former epidemic, except that I do not recollect having bled in any case, having a much more luxurious and delicate class of patients to treat than formerly. I have known it to prevail epidemically in other years, but not so extensively, and never knew a year to pass without witnessing more or less of it.

I know that the remedies for dysentery are almost innumerable, and some are said to be unfailing; but I must be convinced of the rationale of their operation before I can have undoubting faith in their curative powers, even when endorsed by the high and respectable names that sometimes accompany them. This I have not yet understood. Such are opium, very large doses of ipecacuanha, neutral salts, combined with mineral acids, etc. If my idea of the proximate causes of the disease is correct, I do not comprehend how these modes of treatment can have such speedy and universally successful terminations. That the purgative and depleting effects of the salts would fulfill one indication, the sedative effects of the opium another, and the diapheretic and alterative effect of the ipecac, a third, there can be no doubt; but to treat severe cases by either of these modes exclusively, I should be reluctant to do, for none of them, singly, can fulfill all the indications, or produce all the effects required in the treatment of dysentery. Opium, though an indispensible agent in severe cases, I have seen used to a dangerous, if not fatal, extent, when almost relied on. Ipecacuanha is almost as essential,

but Icannot see the necessity of giving it in such enormous doses—one to two drahms—as a diphoretic, and as such is it chiefly, if not altogether, beneficial.

When dysentery arises in malarial districts, (where it is very apt to), and especially if it takes an intermittent or remittent form, the administration of quinia, in addition to the treatment already recommended, will be found very useful. Where the disease merges into the chronic form, I have found the Ol. Terebinth. and astringent enemata very beneficial.

FIVE CASES OF MILITARY SURGERY.

BY ISRAEL B. WASHBURN, M. D.,
Late Surgeon 46th Ind. Vol. Inf.

Case 1.—Samuel Clark, private Co. F, 28th Iowa Inft. Wounded while lying in quarters during the siege of Vicksburg. The ball entered the left buttock high up, passing downward and lodging in the perineum; it was extracted and dressed as usual with water dressings. Upon the sixth day secondary homorrhage occurred. After several ineffectual attempts at ligating the artery by a "Surgeon" present, the bleeding was almost immediately suppressed by the application of persulphate of iron. I have observed that surgeons very frequently suggest and practice the heroic when the more simple remedies would be entirely successful. However, I remember an instance of a different kind. After the battle of Champion Hill, Miss., an Assistant Surgeon attending the ward containing the amputations, applied the presulphate of iron in a case of secondary hemorrhage from the *femoral artery!* The patient died. Assistant Surgeon resigned and is now engaged in the laudable employment of an Insurance Agent.

Case 2.—Bernard M. Minch, private Co. G, 29th Wisconsin Vols. Wounded in the right arm in the battle of Port Gibson, Miss., May 1st, 1863. The ball struck about the middle of the humerus, shivering it very badly. Resection was performed in the usual manner, and about four inches and a half of the shaft removed. The patient received a flesh wound of the right hand at the same time; both wounds healed after the operation with scarcely a bad symptom. He was discharged *well* July 17th, '63. He was able to write with the crippled hand and arm the last I heard of him, which was through Dr. D. DuBois, Surgeon 29th W. V. I., Nov. 24th, '63.

Case 3.—Daniel Cobb, private Co. H, 46th Ind. Vols. Wounded in the battle of Port Gibson, May 1st, '63. The right humerus was fractured in its upper third by a conical ball. Resection of the head and three inches of the shaft of the bone. The shock from the wound being very severe and reaction not being perfect, the wound did not do well, the suppuration being profuse after the fourth day until the death of the patient, which occurred the twelfth day. Instead of leaving those most severely wounded near the field, they were moved two or three times, thereby preventing the union of fractures, and causing more than one case of fatal secondary hemorrhage.

Case 4.—Wm. H. H. Sales, private Co. C, 34th Ind. Vols. Wounded May 23rd, '63, during the investment of Vicksburg. Fracture of the humerus. Resection—the head and three inches and a half of the shaft removed. I saw the patient the 27th day after the operation, the wound was then nearly closed, the pus and granulations healthy. He was sent to General Hospital the 34th day, at which time he thought himself "almost well." I never learned whether the limb was of any use to him or not after recovery.

Case 5.—Henry C. Cruger, private Co. H, 34th Ind. Vols. Wounded July 2d, '63, by accidental discharge of his musket while his fore-arm was resting on the muzzle. The radius

was greatly shattered in its middle third, the muscles lacerated and powder-burnt. Resection—three inches and a half of the shaft was removed by Surgeon R. B. Jessup, 24th Ind. Vols., the ulna left intact. The wound was treated with cold water dressings and seemed to be doing very well until the third day, when the patient had a chill which every Surgeon present supposed would be followed by pyemia. Quinine was given freely, and the wound carefully syringed with dilute alcohol, which treatment was continued two days. The patient seemed entirely free of fever after that, and whisky and tincture of iron were administered instead of the quinine. A yeast poultice was applied and frequently changed, but the benefit of it was considered very doubtful, and water dressings were re-applied, the patient gradually improving.

Eighteenth day. He was sent to General Hospital, at which time he was doing well, the wound healing rapidly and the patient appearing to be entirely out of danger.

CHRONIC DIARRHŒA.

BY GEORGE D. WINCH, M. D.,
Surgeon 42d Wisconsin Vol. Inft.

This very frequent disease of the army (by the discharge of troops) will be distributed through many parts of our country. Its frequency and extreme obstinacy should call forth the experience of those who have been previously associated with this disease sufficient to learn its nature and pathology. We will commence with the *post mortem* appearances. The STOMACH, which is described by many as being diminished in size, we have always found of normal bulk, even in those protracted cases where the diminished dimensions is said to be peculiarly frequent. The mucous membrane, generally dark

red, seldom softened or contains ulcers. The DUODENUM and JEJUNUM sometimes exhibit appearances of an inflammatory character, but generally nothing decisive. In the ILEUM the change is more noticeable, the whole extent o' this is altered, but a gradual increase from the beginning to the ileo cæcal. valve. The mucous membrane is of a dark or reddish-brown color and thickened. The vessels seemingly injected to their utmost fulness. The solitary follicles and agminated glands participate in the enlargement; but we have not succeeded in finding ulcers. The exhibition of the mucous membrane of the COLON is more conclusive of the true pathology. It is a dark red color, thickened, the solitary follicles enlarged. In some cases there is no ulceration to be found, and I confess I cannot diagnose this class from those in which on examination are found large ragged ulcers. In the first class there will often be extreme pain, the passages very frequent and fetid, also the inflamed membrane seems as susceptible of pressure as the ulcerated one. But in the majority of cases the mucous membrane is ulcerated, disorganization increasing from the beginning to the end. We have seen the whole length of the descending colon present one ragged erosion on its mucous surface, and again the membrane of the whole track of the COLON penetrated by a large number of ulcers from one-half to one inch wide, and one or two inches in length, their edges being raised by a narrow, gray colored lymph deposit.

The fatty LIVER is of common occurrence, especially in cases of long standing, and often the lower portion of the right lobe is so disorganized and softened as to be torn or crushed without force; this last is the effect of congestion, judging from the appearances of this organ in cases of shorter duration. The SPLEEN seldom enlarged, but nearly black and softened, and when increased in size the patient has had the symptoms of remittent fever. KIDNEYS, in some cases, appear normal, in others, enlarged and of a bloodless appear-

ance. MISENTRIC GLANDS enlarged. The PERICARDIUM often containing from two to four ounces of fluid.

CAUSES.—It is an easy task to enumerate many which are known to be common predisposing and exciting causes of this disease; but it is more difficult to trace in each case its own peculiar cause, which would be of great utility both as to therapeutic and dietetic measures. A want of vegetable diet is a common cause, and if not the most frequent, its effects are the most protracted, and difficult to overcome. The patient must necessarily be fed on vegetable diet a sufficient time to change the condition of the vital fluid before a permanent cure can be established. Crowd Poisoning, although no doubt often predisposing, is less frequently the cause of this disease than of camp fevers, and when the patient goes into the hospital or is returned home, he is no more exposed to this loathsome agent. The same can be said of malaria. Occasionally this disease is the continuation of an uncured acute attack.

SYMPTOMS.—Often this disease commences very insiduously, not even awaking the patient to his danger until his case is critical, and then causing no alarm. This class is generally associated with a strong scorbutic taint; there is much debility, both mental and muscular, inattention to surrounding objects, and the condition of his person, passing from two to six liquid stools daily, without pain. Again the patient may be attacked with all the symptoms of acute enteretis, chills followed by fever, frequent and painful discharges, tenderness on pressure, and these symptoms passing gradually into Chronic Diarrhœa. But this last is not of common occurrence. More commonly the patient has symptoms of (commencing) adynamic fever, as slight chills, headache, aching and pain in the limbs, loathing of food, liquid stools, more or less frequent. The countenance is dark, and the icterode hue so often displayed by the malarial influence is frequently present, skin dry and reminds the physician of a convalescent from an eruptive disease. Pulse from 80 to 90, seldom above

the latter until late in the disease. In some cases there are rhumatic pains, mostly in the shoulders, and cardiac irritability, producing palpitation. Sometimes there is a craving for food, raw and indigestible vegetables are devoured, doing much injury. This is where the scorbutic taint predominates and a proper vegetable diet is found to be a dietetic measure of great utility. Tongue large and flabby, may present a white or yellowish-white coat, often fissured, but at this stage moist. As the disease advances, emaciation becomes apparent, abdomen flat or concave, and a gurgling is felt and heard by pressure. This gurgling sound can often be produced the whole length of the colon. It is as surely found in the right iliac region as at other points in the large intestine. Pulse becomes more frequent and feeble, but never rises to that frequency so often seen in camp fever, but is very weak. Stools increase in frequency, become dark and fetid, and much tenesmus. In many of these cases that prove fatal, the last three or four days the number of stools and tenesmus will equal those of acute dysentery, and these are the cases where the mucous membrane of the DESCENDING COLON and RECTUM is found disorganized by inflmamation and ulceration. No delirium, the mind clear, the patient answering questions till the last. (A strong contrast to camp fever.) The action of the heart grows weaker and weaker until life is extinct. But the patient may recover after all reasonable hope has left the physician. When the pulse is a mere thread in size and no force, by a judicious use of stimulants the vital energies may be brought to that point where proper remedies and nutritious diet will save the patient. A slow and protracted convalescence, with many a relapse of the diarrhœa, must be expected. Recovery is rare where the pulse reaches that extreme feebleness with the adynamic symptoms last described. When it is to take a favorable course the tongue commences cleaning. Where it has been long covered by a dark thick coat, it often commences by throwing off flakes from the posterior and central portions. Pulse stronger and less frequent; skin loses its

roughness and becomes moist and of a more natural color. The stools may not decrease in frequency immediately on amendment where they have not passed but from four to six daily, but when they have been frequent and painful they become less frequent and the pain subsides. Urine will at times be small in quantity, but by the proper use of diuretics the patient will pass the normal amount, while its specific gravity will in very rare cases be very light. In a large proportion very slight alkaline reaction, and we have found deposits of urates, oxalates and phosphates.

TREATMENT.—There is no disease that calls for a more steady and persistent course than Chronic Diarrhœa. Remedies should not be abandoned because of not relieving symptoms in a short time. If he has been exposed to malarial influence he should be removed where he will no longer receive this impairing noxious agent. If the scorbutic taint appears, a judicious and persistent course of vegetable diet should be immediately commenced, with the use of lemonade or citric acid drinks. Oranges, properly used, are grateful and beneficial. The same may be said of apples baked. Animal diet is also necessary to keep the vital powers above that point where the reparable process fails. Beef tea and essence, and chicken soup are the most common and useful articles. Rice in the above preparations is a useful adjunct. Milk must not be neglected, we have found it of great utility where there was not much desire for food, giving very small quantities often. By properly dividing the doses it seldom produces indigestion, and while changing from one article to another of the above preparations, milk can be perseveringly used. The articles of diet should be ordered by the physician, changing them as the circumstanses of the case require. Frequently beef tea, taken with relish, at first, soon produces nausea and vomiting. It is then that some of the other preparations mentioned should be used in its stead. *Never* continue an article after it produces the effect last mentioned. The quantity should also be prescribed.

Mutton chop and soft boiled eggs should be tried, and if not producing indigestion or irritating the bowels, should be continued.

The therapeutic measures of this disease are of far less importance than the dietetic. It is only by a judicious use of tonics, chalybeate astringents, opiates and alcoholic stimulants that benefit can be received. Opiates should be given to quiet pain when there is tormina, in repeated half-grain doses, until it effects its object or when the patient is wakeful and cannot sleep in one grain doses at bed-time to produce sleep, and that should limit the use of anodynes, except by injection, of which we will soon speak. There are many preparations that are lauded, but we will speak of those only which we have used. Tr. Ferri Chlo. in doses of 10 to 15 drops every three hours, is often well borne and very useful in connection with opiates, when they are necessary, or alcoholic stimulants if there is prostration. This has proved a more useful remedy in our hands than Sul. Cupri. Sul. Ferri. The liquor Ferri Pernitratis we have never used, but many Surgeons of much experience with this remedy inform us it is second to none. If any tendency to periodic exacerbations, Quinina should be used. Mineral acids are useful, especially in the scorbutic variety. Give Aromat. Sulph. Acid 10 to 15 gtts. three times daily. If there is hepatic derangement the Nitro-Muri. Acid is more desirable. Tannin, Catechu, and other astringents of that class are of no utility, on the contrary, do injury by irritating the stomach and producing hepatic congestion.

Alcoholic stimulants should be given under the same circumstances as would point to their use in other diseases. They should not be given recklessly; but in cases as described where the system is becoming prostrated below that point where the reparable process can be maintained, alcoholic stimulants should be assiduously employed. Prescribe a certain amount; watch the patient and vary the quantity according to its necessity and effect. *Never* leave this part to the

judgment of the nurse. In some cases where depression and prostration are so far advanced as to shut out all reasonable hope of recovery by this course, the patient will commence to mend, and immediately, aided by supporting diet and tonics will soon begin a slow convalescence.

The importance of suitable enemata must be apparent when the pathology of the disease is carefully reflected upon. That the lower portion of the *colon* and *rectum* are generally more seriously diseased than the other parts of that gut, is no longer an uncertainty. That fact clearly indicates their use. Among a list of remedies highly recommended, I much prefer Cupri. Sul. and Tr. Opii, used separately or together according to circumstances. Sul. Cupri. grs. iv., Tr. Opii m. xx Acacia pulv. ʒ ss. Aq. ℥ iv, m., used morning and evening, seems admirably adapted to those cases when the signs and symptoms denote iritation, inflamation and ulceration in the lower portion of the gut. Sulphate Copper will not produce the pain, and will be much longer retained than the Nit. Silver. From these injections, judiciously used, there will be derived much benefit. This class of local applications deserve more notice than is given them. By their use the pain will subside, evacuations become less frequent, and all the local symptoms improve.

To furnish a proper combination of hygenic and dietetic measures, alcoholic stimulants, chalybeate preparations, quinine and local applications, requires much care and attention of the physician.

Nux vomica has been extolled by those who have had experience with the remedy. I have never used it but in that class of cases characterized by no pain, much debility, both bodily and mental, it would, (judging from its action in other cases,) be very beneficial. A large majority of cases will, if judiciously treated, recover although it may require weeks or even months.

SELECTED.

CORK AND ITS USES.

By JOHN R. JACKSON.

Amongst the many materials or productions in use in every-day life, cork may certainly take a position in the foremost rank. We all know something of cork; from our earliest childhood we have been familiar with it. It is a substance that has retained all its ancient uses, as well as its importance and value, from its earliest history down to our own day. Unlike most other things, it has not, even in this age of application and invention, found a rival. True it is we have "corky" substances in abundance, produced in almost every country; but neither the productions of nature nor the productions of mechanical skill have produced an efficient substitute for cork, one that could take the place of this valuable bark, or even go side by side with it.

Considering the great quantity of cork that is consumed even in this country alone, as well as the great amount that is wasted, the quantity of bark annually stripped in the cork-forests is an operation of no little importance. The slight value many individuals place upon cork, on the whole, does not lead us in the least degree to estimate its real importance, which, in a commercial point of view, is of no trifling nature.

There must needs be a large quantity imported; for amongst wine merchants, bottled-beer merchants, or soda-water makers, a cork is never used a second time; but then what an immense bulk would go to make up a ton of cork, and yet it is by weight that the imports are estimated. There is an immense consumption, and the demand of late years has almost exceeded the supply. The annual quantity imported into this country averages about 5000 tons.

Of the early history of cork, it is very clear that it was well known and in use amongst the Greeks and Romans. Theophrastus distinctly alludes to the fact, now so well known, that the continual barking of the trees tends to improve the

quality of the cork. With the Greeks it was called "Phenos," while the Romans knew it by its present specific name of "Suber." Though cork was probably used in very remote times for similar purposes to those of the present day—that of stoppers for bottles amongst the rest—this, however, does not seem to have been its common or general use, inasmuch as we find that vessels of that period were frequently closed by earth, clay, and other similar substances. Stoppers of cork, or "corks," as we now call them, appear not to have been generally introduced till some time in the latter part of the sixteenth century; from that period, however, its use has been getting more and more universal in all parts of the world.

Before the introduction of cork, or its general adoption for bottle-stoppers, various articles were resorted to for this purpose. We are told that apothecaries secured the contents of their phials with stoppers made of wax, which must have been a somewhat tedious process. But even in our own day, a similar custom prevails in many parts of Europe; for with many of the Italians and Neapolitans, for instance, the practice of securing their wines, by pouring oil into the mouth of the bottle before tying it down with skin, is still very prevalent.

Before entering into the uses of cork, however, let us pay a short visit to the forests from whence it is obtained, and trace its progress from its natural position to that of its ultimate application.

Cork, as we all know, is the bark of a tree, though commercially miscalled "corkwood." It is produced by two species of oak, *Quercus suber*, L., and *Quercus occidentalis*, hence called the "cork-oaks." These trees grow abundantly in large forests in Spain, Italy, the South of France, and Northern Africa, the latter species being found alone on the Atlantic side. This species is also peculiar, from the fact that it ripens its acorns in the second year.

In general appearance the cork-oaks differ little from the common oak, except, perhaps, that they do not attain to so large a size. There is also a slight difference in the form of their leaves—those of *Quercus suber*, L., being more lanceolate, and the margins not so deeply sinuate; the acorns are also somewhat longer and more tapering in form than those of the common oak.

The cork-oak does not require a rich soil; but, on the contrary, it seems to thrive best in poor and uncultivated ground.

To collect this cork, incisions are made longitudinally and transversely in the bark of the living tree, the instrument used being a kind of axe, the handle of which terminates in a wedge-shaped form. After the bark is cut through, it is beaten to loosen it from the liber or inner bark, the wedge-shaped axe-handle being inserted to lift the bark from the trunk. The cork thus removed usually varies from three-quarters of an inch to three inches in thickness. The next operation is to divide it into pieces of a uniform or convinient size, and to flatten it, each piece having, of course, a similar curve, corresponding with the trunk of the tree from whence it was taken. For this purpose, the pieces are placed in pits and covered with water, and then pressed flat with heavy stones. The well known charred surface upon these cork slabs is caused by the application of heat at an open fire, after the steeping, for the purpose of contracting the pores. The pieces are afterwards bound up in bales, in which form they appear in the market. In removing the cork from its paternal trunk, care has to be taken not to injure the inner bark next the wood, else it would affect the second crop of bark, and perhaps injure the tree. This operation of stripping the bark, if dexterously and carefully performed, has, as we have already said, no detrimental effect, either upon the growth of the tree or the rapid formation of the new bark; but, on the contrary, the tree is said to grow more hardy and vigorously. The first crop of bark is usually taken when the tree is about twenty-five or thirty years old, but the crop is of less value than that of any succeeding gathering, as it is harder, very uneven, and more full of holes. The second gathering, however, which is in about eight or ten years after the first, is still of an inferior quality. The third crop, collected in about eight years after the second, is usually the first marketable cork—that is, the first crop that is fit for cutting into bottle corks. When the trees have attained to this age, so that three crops have been taken off, they usually yield a supply of good cork about every seven or eight years; and its quality improves, as well as the quantity enlarging, at each successive gathering. The season chosen for the cork harvest is usually the month of July or August.

It will be seen by the foregoing that the quality, and consequently the commercial value of cork is materially affected by soil, length of time allowed in growing, and also of care in collecting. There is as much difference existing in the quality of cork as in most other articles of daily use. The finest

kind should be compact and firm, but at the same time not hard, of an even texture or grain, and of a slightly pinkish tint. This kind of cork is generally selected by wine merchants for bottle-corks; while the coarser kind, which is always more porous, full of small holes, and perhaps punctured by insects, serves for bungs for casks and for the various other applications to which cork is put in a cheap form. When cork is required to be thick, it is usually found coarse, as it must be allowed a longer period of growth to promote its thickness. The charring or singeing process to which this kind of bark is frequently subjected, for the purpose of filling up the pores and making it impervious to fluids, has also a detrimental effect, as it secretes an empyreumatic oil, which is given off and frequently taken up by the liquids it confines; but there is no doubt that care is taken in the selection of these corks, and methods adopted for the prevention of this chemical contamination, as much as possible. This operation of charring, to which all cork was formerly subjected for the purposes we have just mentioned, has been partially succeeded of late by that of boiling the cork and afterwards scraping the surface. This is said to improve rather than to deteriorate the cork, it being more effectual in filling up the pores.

The uses of cork are so numerous, and its application so continually increasing, that the supply of late, as we have said before, has not been sufficient to meet the demand. It is not our intention to enumerate all the uses to which this most useful article is put—indeed, it would be unnecessary to do so, so well known as they are to all; but there are a few modern uses or applications to which cork has been found suited in recent inventions, and which are, perhaps, among the "things not generally known;" but these uses generally consume waste or refuse cork, such cuttings as were formerly considered of no value.

The new elastic floor-cloth, now so well known as "Kamptulicon," is a combination of caoutchouc and cork; and this is but one instance showing that cork, treated with other substances, can be made into a really useful article. Cork-dust has been used successfully with india-rubber in the process of vulcanizing, and to so fine a powder is it reduced for this purpose, that india-rubber so treated is capable of being moulded into the most delicate forms. Another recent application of cork is for stuffing beds, and we believe this is now done to a large extent.

A large Cork Company, lately established in London, and owning large forests in Portugal, have recently imported the virgin cork into this country, with the impression of its becoming useful for rustic garden-work. It is brought in very large pieces, and, from its rugged, uneven surface, which is frequently covered with lichens, together with its portability and its porous nature, which makes it capable of retaining moisture, will no doubt cause it to be much used for such purposes.

Though the bark of the cork-tree contains a considerable amount of tannin, it is not in general favor among tanners, on account of its not imparting the required "bloom;" and for this reason it is seldom used alone, but is mixed with English oak bark. The inner bark is that which is used for tanning purposes, the outer bark being quite devoid of any of the required properties. The removal of the inner bark causes the death of the tree; and it is chiefly from Sardinia and some parts of Spain, where the trees are very abundant, that it is imported for this purpose. The quantity of tannin, as well as the color of the bark, varies much, according to the district from whence it is obtained. The Sardinian bark is thicker and of a deeper red color than any other.

To return to cork itself and its more common applications, we find that there are two sorts or qualities known in commerce, called respectively white and black cork. The white, which is chiefly produced in the south of France, is the best, as it is smoother, of a more even and finer grain, and freer from holes and knots.

The operation of cork-cutting is one requiring great dexterity and neatness, and is carried on to a great extent both in France and England, though, as might be supposed, the French surpass the English in this art. Machinery has been tried for the purpose of cork cutting, but all is now cut by hand. Considering the difficulty, with which we are all acquainted, of cutting a clean surface to cork, it is surprising to see the rapidity with which the workman turns out a perfect cork stopper from the little square pieces furnished to him. The knife used for this purpose has necessarily to be very sharp, as well as being very thin; the blade is broad, and when the edge has become dull, it is quickly sharpened on a very fine-grained stone. The bench or tube at which the workman sits has a ledge round it to prevent the corks falling off. On the Continent, a notch is made in the edge of the bench to place the back of the knife in, to prevent it from

slipping. Thus the edge is uppermost, and the knife has to be guided slightly while the cork is pressed against the edge, and so dexterously turned and rounded to the required form. All the corks thus cut are thrown into a basket to be sorted, which is usually done by women and boys.

The great importance of cork as a commercial article has been the cause of experiments being tried for its introduction into the Southern States of North America. It is, however, some years since the American Government tried this plan of naturalization, for which purpose large quantities of the acorns were imported from the south of Europe. More recently, we learn, from Sir J. W. Hooker's last Report on the Royal Gardens, Kew, that steps are now being taken by the Colonial Government of South Australia to introduce the cork tree, and a number of young plants have been raised at Kew expressly for transmission to that colony.

We sincerely hope that these efforts to establish a tree furnishing so useful a product as cork, in a colony where it would become a valuable addition to its commerce, as well as adding to the supply, which, at the present increasing rate of consumption, is much to be desired, may be crowned with success.—*American Journal of Pharmacy*, from *The Technologist.*

EDITORIAL AND MISCELLANEOUS.

DR. BRAINARD'S ADDRESS BEFORE THE AMERICAN DENTAL ASSOCIATION.

Gentlemen:

It gives me great pleasure to meet here the members of so honorable and useful a profession as yours. The profession of Dentistry is one of very modern origin, and is that branch of the medical profession which owes its development and perfection most essentially to our own country, and is indeed, I think I may say, the one branch of the profession in which we Americans can claim especially the pre-eminence. To be

an American dentist is a recommendation in all the principal cities of Europe, and although the medical profession in general, and the surgical department especially, has an honorable position in the literature and among the profession in foreign countries, it can hardly be said to have a claim to the title of any pre-eminence.

I have said that your profession was of comparatively recent origin. It is almost, I think, within the memory of many persons here present when it was regarded as a merely mechanical operation, little better than the higher branches of mechanical employment. Step by step it has developed itself to a degree that, in perfection, in usefulness, it does not in my opinion, rank second to any of the single branches of medical or surgical science, [applause]; so that at the present day, to be without a dentist would be to be without one of the essentials of civilized life. [Renewed applause.]

Now, in speaking of its having a mechanical origin, I do not intend anything disrespectful to it. My own especial branch of the profession is surgery, and, I might say, a part of surgery; and it is not very long since surgeons, as a class, occupied a position far less honorable and important than that occupied by dentists at the present day. In the middle ages in Europe, so called, or rather in the latter part of the middle ages, from the fourteenth to the end of the fifteenth century, or thereabouts, surgical operations were performed by barbers. There was no distinction between those that performed a surgical operation and those that cut hair, and curled hair, and powdered hair. The duty of the surgeon was considered to be to perform an operation when he was directed, and as he was directed by a physician, and, when he had performed the operation, to retire and leave the case to the physician. And it happened, after a certain period of time, that these operators acquired a certain amount of knowledge beyond the immediate needs of operating, and were called upon to advise about operations, and about the treatment of cases after operations. And this was

considered a great innovation upon the profession. It was considered something outrageous and disgraceful to the profession; and the man who should have consented to meet a surgeon in consultation would have been expelled from the faculty for consulting with a quack. I have in my library a work published by the President of the Faculty of Medicine, in Paris, entitled "*The Brigandage of Surgeons*," setting forth that they were asserting claims which, if allowed, would be the destruction and disgrace of the medical profession.

This comparison I bring forward for the purpose of sustaining the assertion that I make, that the difficulties under which the dental profession labors are nothing new. By speaking of the difficulties under which you labor, I mean this: the difficulty and length of time which it has taken for the honorable, and educated, and competent men of that profession, to assert and maintain full equality in professional standing with members of the medical profession who practice other branches of it. That difficulty has existed in regard to every particular branch of the profession that has at any time been embraced by any particular class of men, and is not peculiar to the dental profession. It results from that deep seated prejudice, for I can call it by no other name, that has existed from the earliest times and is inherent apparently in the nature of every profession and that is to resist innovations or changes in regard to the doctrines or the practices of that profession. This peculiar aversion to changes results from the nature of professional education, and is one of those things that is treated of by Lord Bacon in his *Novum Organum*, under the name of "Idols of a Class," or those things which prevent members of a particular class from seeing the truth in regard to their own profession. It is, and has been, one of the great obstacles to the progress of the medical profession. It is an obstacle which at the present day is partially, but only partially, overcome. It is the thing which has prevented a large number of men of genius and industry in the profession from embracing and following out the study

and practice of a particular class of diseases, in such a way as to have perfected our knowledge of the nature and treatment of such diseases.

Now, the principle that I wish particularly to assert here is this, that the medical profession, in order to be most useful, in order to acquire its due influence over the community, in order to perfect its knowledge of the nature and treatment of diseases, must adopt a special course of study; each individual member embracing that course which he judges on the whole to be best adapted to his faculties, and leaving out to a certain extent others for which he has no qualifications. I advocate special studies and special practice; and, although the words have been somewhat discredited, I advocate "specialties" and "specialists."

Now, I undertake to say that the very great opposition which this doctrine has met in the profession, is not founded upon reason or justified by the experience of the profession. It is an opposition which is working to the disadvantage of the profession as well as the public, and to the manifest disadvantage of a very great number of the individual members of the profession; and therefore I wish to insist a little upon the point.

What are the natural divisions of the science and practice of medicine? Is there no natural division? I hardly think that any one would be so bold as to assert that there are, and ought to be, no natural divisions. For a long time, when the science of medicine was in a very rude and imperfect state, the members of that profession did study and practice all its branches; and in the older works on Surgery, Pharmacy and Chemistry were as much treated of as the operations of surgery. Still, even at that time, there was the commencement of division, and the first was into Pharmacy, Surgery and Obstetrics. The next division which came was into Medicine and Surgery, Surgery being, as I have stated, the mechanical application in the manner already indicated. At a later period, there commenced to be apparent the distinction be-

tween the Obstetrical department of the profession, and the separation between Pharmacy and Medicine was accomplished entirely. . By degrees the distinction between obstetricians and medical practitioners came to be recognized in particular localities, in large cities especially, to a very considerable extent; so that medicine, towards the middle of the last century, might be said to be divided into Pharmacy, Medical Practice properly so called, Surgery, and Obstetrical Practice; whilst yet it remained true in regard to the greater portion of the civilized world—the country in general, in America as well as in Europe—that the larger number of practitioners continued to practice all tis branches, to collect and prepare their own medicines, to practice Pharmacy, Surgery, and Obstetrics. And at the present day, this is the case with a very large part of the profession throughout the civilized world.

Now, it is manifest—all experience and reason show—that men who practice medicine in this way practice it only in a rude and imperfect manner; that they neither understand Pharmacy, nor Medicine, nor Obstetrics; that, from the nature of things, they are incapable of acquiring skill in any one of those branches; that it is absolutely necessary, in order that there should be any progress in regard to the science or practice of medicine, that some of these should be excluded, and others proceeded with especially, by each individual member of the profession.

Let us examine the question for a moment. The Dentists, as a body, have, according to my own knowledge and observation, perfected the mechanical means of performing operations beyond what has been done in any other branch of the profession. They are better mechanics than the Surgeons, and their instruments for accomplishing the different objects which they have in view are more numerous and better suited to their purpose than are the instruments of surgeons. Now this is essential to the proper performance of dental operations. And how this has happened? It has been simply that there have been

dendists, as a class, who have devoted their attention to that purpose; and we as surgeons never could have invented or perfected these instruments, and consequently could never have perfected dentistry. And that division of labor is a thing which, at the present day, is manifestly necessary, and which no one now disputes.

In regard to surgical instruments, there are two departments in which they have been singularly perfected. The one is in regard to those instruments which are used for crushing urinary calculi, which are the most admirably adapted to their purpose. How did that come about?—Three men of genius at the same time happened to devote their whole attention to that thing—the crushing of stone—and they especially perfected those instruments. And without that perfection of these instruments, the crushing of urinary calculi must have remained forever, as it had up to that time, a mere phantom floating in the mind without any practical application whatever. Therefore it was necessary in this particular that there should be special studies. The other branch in which I consider the mechanical means to be wonderfully perfected, is that regarding instruments for operations upon the eye. These instruments have been brought to such a degree of perfection, of delicacy and accuracy, that they are capable of accomplishing things almost inconceiveable, and accomplishing them regularly, constantly, and without difficulty or danger. Now, how has this happened? It has happened in the same way; there have been a class of men who have devoted their attention to that subject exclusively, have thought of nothing else, have worked at nothing else but the perfection of means for the accomplishment of that which they saw before them to be done. But when you come to other things that have not been made specialties, the condition of our science is singularly rude and imperfect. There is nothing in our science at the present day which has the slightest claim to be respectable apparatus for the treatment of fractures. Particular individuals, by the

attention which they have paid to it, and by an excess of superior mechanical talent or ingenuity, have been able to accomplish with the instruments which they use a considerable degree of success, but there is no instrument for any given fracture that can be mentioned, that can be taken by a person of ordinary good education of the profession and put upon the member in such a manner as to accomplish any perfect result. The greater number of the instruments which are used in the profession for fractures of the leg and called "fracture boxes," are not anything better than dry goods boxes, [applause,] and simply serve to accomplish the result of concealing from the surgeon the position in which a limb may happen to lie. [Renewed applause.] What is the reason of that? The reason is, that there never has been as yet any instance that a man devoted himself to fractures as a speciality, and nothing else, and this is the one branch in which a specialty is most needed. They are the species of accident which are the most frequent, and which disable a man more than any other, and entail untold miseries upon him if unskillfully treated; but the instruments for the accomplishment of this purpose never will be reduced to any great perfection, until it shall be known that the devoting of time and talents to one subject leads to honor and not to being partially thrown out of the profession. [Applause.]

If I should be unfortunate enough to meet with a fracture of the jaw, the first thing I should do would be not to send for a surgeon at all. I should send for a dentist. [Cheers.] They have directed their attention to the mechanical means and apparatus necessary for holding the jaws in their place, to such an extent, that they are better qualified to make them than surgeons are as a general thing, and, perhaps I might say, more than any surgeons are.

I might go on and point out to you that with regard to no one thing about them are the instruments used by surgeons, the best adapted to their purpose.

We are disputing, at the present day, all over the world

what kind of sutures are the best to use. A great many of our instruments for the purpose ligating arteries and performing similar operations, are singularly rude and imperfect, and their imperfection is only remedied by the skillful use of the fingers of the surgeons.

How is this to be remedied? It is to be remedied, gentlemen, by special study; by the profession changing its views upon that subject, and saying to the young men, when they are entering the profession and when they are about to leave the schools, that it is better for them to devote themselves to some particular branch of the profession and try to understand it. I often have young men from various parts of this country, who are here to visit the west for the purpose of locating themselves in their practice. They very frequently come to Chicago, and we are always glad to see them. We are very proud of our city, and if you want to get into the good graces of any Chicago man or woman, you have nothing else to do but to tell them it is a nice place. [Laughter.] But these young men come here and they say: "What kind of a place is Chicago for a professional man?" Now that is a very hard question to answer, because politeness does not permit me to ask another question. I could say to the young man, that if you know any one thing better than the generality of the profession, it is a good place for you; but if you do not, it will be a bad place for you. And for those young men who are incapable of applying their knowledge in such a way as to earn their daily bread, incapable of using their knowledge for the benefit of any particular class of men, so as to make it desirable for them to call upon them, Chicago is not the place. That is the difficulty under which members of the profession labor when they would enter into practice.

How is this to be remedied? It is to be remedied, in the first place, by acting upon public opinion. The profession which listens with leaden ears to the propositions which come from members of it to change the time honored usages to

which it is subjected, is sensitively alive to intimations which come from the people who employ them. Public opinion in this country is law, and in order that the laws be made good, public opinion must be enlightened. Individuals are powerless, but ideas are irresistible; and the way to remedy it is to take the idea or fact that in order to make the profession useful and powerful, it must be developed and perfected in all its branches, constituting each one of these branches one body, each part of which co-operates in its proper sphere and most useful manner in advancing the interests of the whole profession. [Cheers.]

Now, in saying that I am in favor of special studies and practice, in that way, I do not commit myself to anything; and the profession won't regard this as anything but a "glittering generality." Therefore, I state that I think there ought to be Dentists to attend to the teeth, Oculists to attend to the eye, Aurists to attend to the Ear, and special Physicians to attend to diseases of the heart and lungs and make the physical examinations which are so difficult, and a special class who will be able to use the microscope for special examinations, that there should be not only practitioners of obstetrics, but those especially devoted to different branches, I mean that the incapable obstetrical practitioners never should be allowed to use instruments; that there should be men qualified for that. And then in regard to surgery, that it should in addition have a number of branches. That in these there should be one branch devoted especially to the treatment of fractures. That there should be another branch devoted to the treatment of tumors, without absolutely circumscribing these departments by definite lines at the present time. When that is done, then the profession will cease to occupy the principal part of the time in its meetings or associations with quarreling with quacks. The man who is thoroughly accomplished in any particular department of his profession, is very little troubled by quacks. [Applause.] Then the public will come to know the usefulness of the profession.

The dental profession, at the present time, is not consulted in one case in a hundred, or one in a thousand of those which require the care of a dentist. That is because the medical profession is not educated to the proper standard, and does not tell these people as they ought to do, that in cases of difficulties about the teeth, they should apply to a good dentist.

The same is true in regard to Surgery. There are operations enough that ought to be performed, in every populous county in the State of Illinois, and which are not performed, to give employment to all the surgeons in those counties. They do not know that there is any man who applies himself to that particular kind of disease, and when they look around for information they look to that particular kind of advertisements in the newspapers; and you know what kind of information they get there. [Laughter.] I repeat, then, that the way of progress in the medical profession is in the way of pecial studies.

How is this to be brought about? I would not have you to suppose, by any means, that there should be a special school or every department of medicine and surgery. On the contrary, I would very much prefer that there should be no divisions whatever. And if I might be permitted to express n opinion upon a subject which may be delicate, it would e an opinion with regard to the dental profession, that they ad better not be separated from the medical profession. I think it would be better for them to receive their education in the same schools and to the same extent as other members of the profession. And I think that in order to effect their education there ought to be and will be, perhaps not in my day, but there will be professorships of diseases of the teeth in every respectable medical school in Christendom. [Cheers.] What is taught at the present time in most medical schools in regard to teeth, is the order and time of dentition; and then, in case the child is sick during that period, that the gums are to be lanced. [Laughter.] In some schools there is a little advance upon that. But there is no medical school, so far as I

have any knowledge, where the diseases of the teeth and the causes which produce them, the means of obviating them, the irregularities of the teeth and the means of correcting them; the best thing to do in case of any particular appearances of the teeth; I am not aware that in any institution, even to that extent, it is properly taught.

Of course there must be colleges of dental surgery, so long as dental surgery cannot be learned elsewhere. This is a want, and until we can supply, it the practice of surgery must be necessarily more or less imperfect. It is necessary, in my opinion, that the dentist should be an educated physician. [Cheers.] It is necessary that he should understand the structure of the body beyond the teeth. [Cheers.] And I will mention this curious thing about anatomy and quackery. Anatomy in itself would not seem to teach a man much of a practical nature; but I have never yet seen an accomplished anatomist who was a quack, or a quack who was an anatomist. There is an incompatibility between the pursuit of that sublime science, which makes the two incompatible; and if you will fetch before me any man, whether he be a dentist or otherwise, and he will tell me all that is known in reference to anatomy, I will accept that man as a scientific man, without asking him another question. [Laughter and applause.] That is the foundation of all medical science, and therefore you must have that; and you must have, in addition to that, the knowledge of physiology. You must have an especial knowledge of the action of medicines, as they operate upon the human system, not to speak of those other branches of science and accomplishments, outside the profession strictly so-called, which are so necessary to give influence to science, to render man happy, to adorn his life, and make him a gentleman. I would have, in the first place, all the different classes of the medical profession educated in the same schools, to the extent of acquiring this general knowledge of which I have just spoken; and then I would have in each college not only a professor of

diseases of the teeth, but I would have a special professor with regard to a certain number of other branches, at present of the diseases of the eye and ear, and of the nature and treatment of deformities of every kind. These branches have all acquired a degree of development which requires them to be treated from separate chairs; and when the student had got sufficiently accomplished in general principles, I would have him adopt that branch which he proposes to follow, and devote his special attention to it; and I would have these new chairs instituted from time to time as the wants of the community seem to require.

Medical science, which two hundred years ago was imperfect, has at the present time acquired a degree of development which renders it impossible that any one should master it in all its details. No intelligent man devoting his time to it can read all the works connected with it that appear in the English, German and French languages, from one end of the year to the other. It is a physical impossibility. It is a physical labor that he could not endure. How then is he to become acquainted with the details of all the different branches, able to perform every kind of operation, able to prescribe for every kind of disease? In proportion as the science advances, it will become still more extended, and difficult. As each science is perfected, this is the rule. There will be further advances which at the present day it will be unwise, if not impracticable, to define.

I have said that the profession, organized in the manner in which I propose, should be formed of parts not in conflict with each other, but should constitute one harmonious whole. The dentists are capable of exercising a great influence upon society. They are a numerous, enlightened, and I am happy to say, wealthy and influential body of men, and we, with all our prejudices, cannot afford to leave them separate and standing off. [Laughter.] The physicians and surgeons are capable of exercising a great influence in favor of the dentists, and they would, if better informed and more enlightened,

exercise a greater influence than they do, by directing their patients always to apply to them for advice with reference to every question which might arise as to the teeth. This would be an advantage to the dental profession, and they would get it to a much greater extent if they were a recognized part of the medical profession, as they deserve to be. So with all the other different specialties; and whenever I see a man taking up one of these specialties, and for years together undertaking the labor connected with it, I say, "Go ahead, do what you can in that branch of the profession." I do not regard him as in any degree conflicting with my own or any other branch of the profession; I am happy to see it, and I carry my approval to the extent of recognizing the principle in branches of the profession of which I might have, myself, some little doubt.—Such branches as the application of electricity to diseases, about which our information is so imperfect and indefinite. I consider that the application of electricity, by an intelligent man, would probably be of great use, and therefore when a man undertakes that specialty, I think he enters upon a useful work, and one that it is necessary to make a specialty of before it can be relied upon by the profession generally. It is the same with regard to another class of practitioners—the movement-cure men. That term—"Swedish movement cure"—is an unfortunate name. The method of treatment to which it is applied, did not originate in Sweden, but is founded upon the principles of physiology, justified by experience, incapable of being applied by practitioners who have not the necessary knowledge, and promising, in the future, as it shall be developed, the relief of a large class of diseases which have been, heretofore, and which are, at the present time, to a great extent, beyond the reach of surgical treatment.

These, gentlemen, are the essential outlines of the ideas which I wished to present to you. "A word to the wise is sufficient," and therefore I need not dwell upon them. It has given me great pleasure to know that this convention was a

successful convention, and that it was attended by a large number of men from various and distant parts of the country. You have already received a welcome from your own profession here: that welcome was only the expression of the feelings of the general community with regard to yourselves and every other body which comes here for purposes so useful and honorable as yours, and therefore, from the harmony of your session, I have only to hope that it may be useful, interesting and improving, and if you ever need a place to meet in on another occasion, I would take the opportunity of asking you, on behalf of the medical profession and our citizens, to come back to Chicago. [Loud cheers.]

Dr. Cheesebrough, of Toledo, moved:

That the thanks of the convention be unanimously voted to Professor Brainard, of the Rush Medical College, for his assistance to us in our course of life, and that the sense of the convention be expressed by rising.

Professor McQuillen, of Philadelphia, moved as an amendment:

"And that the learned Professor be requested to furnish a copy of his Address for publication in pamphlet form."

Dr. Cheesebrough accepted the amendment, and the motion, as amended, was adopted.

ACUTE PLEURO-PNEUMONIA,

PRODUCING EMPYEMIA AND CONSOLIDATION OF THE LUNGS.

By E. R. TRAVERS, M. D., Amboy, Ill.

March 21st, 1864, I was called to examine a patient, Mr. Harrison Pratt, aged 22, who had been sick about six weeks, and treated by Homœopathic medical skill during this period, when he was given up to die by that fraternity. I found him

laboring with hurried and difficult breathing, a low, fluttering pulse, and suffering with acute pain. The left side of his chest was abnormally enlarged, while the heart occupied the right side; respiratory movement was confined to the right side; the left side was dull on percussion, from the scapular to the lower edge of the false ribs. I discovered fluctuation between the fourth and fifth ribs on the left side, and made it known to him and his friends. I then carefully introduced a grooved needle in a direction obliquely upwards and inwards, just below the angle of the fourth rib, when pus flowed out freely, of a thick, white appearance and fœtid odor. I then introduced the trochar in the same place, and drew off *six quarts of matter*, and injected the cavity with a solution of comp. tinc. of Iodine and rain water, in the proportion of one ounce of the tincture to a pint of water, and painted the surface affected with the comp. tinc. Iodine. I ordered him to take ten drops of the syrup of the Iodide of Iron three times a day, with Cod Liver Oil freely, beef tea, wine and oat-meal porridge.

In two weeks afterwards I again introduced the trochar and drew off *two gallons* of the same fœtid matter, of a somewhat thinner consistence; and in one week later I repeated the operation, and drew off *six quarts* more, which made *five gallons* in all, besides a large quantity that oozed out after each operation for several days. I continued to paint the surface with the comp. tinc. Iodine, also injecting the cavity with the solution above mentioned.

My patient was enabled to walk about the city and ride in a buggy, after the second operation. He expressed himself very thankful and happy after each evacuation of pus. He has continued to improve in health and strength ever since, and has removed to his father's home in the State of Pennsylvania, where he is now enjoying tolerably good health.

MECHANICAL TREATMENT OF DEFORMITIES.

By C. R. BLACKALL, M. D., of Chicago.

Many causes have combined in producing a variety of Deformities which are not amenable to any method of treatment within the scope of the general practitioner. Curvatures of the spine, distortion of the chest, enlargement of the joints, contractions and atrophy of the limbs, are among the number, and have become objects of frequent, if not daily observation, while very little is attempted toward effecting a cure, under the belief that nothing of a permanent character can be accomplished. But it may be abundantly demonstrated that a large majority of such cases are susceptible of cure by mechanical means, if such means are properly and persistently applied.

A method of special practice, originating in Europe some fifty years since, but elaborated and improved through the genius and assiduity of a few American physicians, has become developed into a definite system, based upon and in harmony with physiological laws. Its varied measures are proven to be of such character as will so modify the processes of nutrition that a healthy, in place of a diseased, action will be induced. It has received a popular title which, for want of a better, will probably cling to it, being known as the "Movement Cure." Essentially, it is a series of exercises, of prescribed quality and quantity, administered at the hands of the physician and assistants, with the aid of ingenious apparatus, frequently devised expressly for the particular needs of the case in hand. These exercises, motions, or "movements" vary in character, according to the nature of the disease and the age or condition of the patient. They are equally applicable to childhood and old age, because their degree can be easily adapted to either. In general, it is necessary that at-

tention should be bestowed upon each case every day, and with as much regularity as possible. In its administration, the tact and skill gained alone by daily experience, added to necessary professional attainments, are essential, in order to secure success, because, not only is the muscular effort to be made or induced, but the mental state must be so controlled, that a thorough consentaneousness of action will result. The physician who fails in this latter point must necessarily fail in all, whether in general or special practice, but especially in this, where weeks must often elapse ere the results, perfectly certain to the operator, can be satisfactorily demonstrated to the superficial, though anxiously interested observer, or even to the patient himself.

I need not, perhaps, be more explicit in the matter of details, yet it is evident that such a system cannot be carried out except some specified time and place be devoted to it. Under such conditions the results attained will prove it a valuable agency in the curing of disease, and one that once understood will be fully appreciated by the medical profession, as well as by the large class of sufferers whom it proposes to relieve.

We are frequently under a necessity for prescribing EXERCISE for our patients, indeed, very often it is the only thing necessary in order to secure return of Health, but how, when and in what degree, it shall be used, are not easy to direct, and we are left to a few general principles, the whole matter being subject rather to the judgment of the patient than of the physician, hence the frequent failures in this direction. Yet the exercise must be obtained in some way, if the patient ever fully recovers. But it is not practicable for the general practitioner to stop, in each case, and administer that which may be urgently needed, because of the numerous demands upon his time, as well as for other reasons. Here, then, occurs the need of a specialty, and the result is found in a system which does not assume to be a universal panacea, but really is a valuable adjunct, if not certain means, in very many instances, and one which leading members of the profession not

only pronounce rational, but eminently valuable, and successful.

I beg to submit a few recent cases, by way of illustration: Mrs. ——, under the medical care of a distinguished gentleman of this city, was brought to me by her physician for treatment. The right arm and hand were much atrophied, and the wrist and hand in a state of rigidity, in consequence of Inflammatory Rheumatism. Within two months the use less members were fully restored, both as regards size and the mobility of the joint.

Miss ——, in a condition of great general debility, and with well-marked lateral curvature of the spine, became my patient in April, 1864. She returned home in July following, relieved of her deformity, and able to resume her duties as a teacher.

Master Willie ——, aged three years. Angular curvature of the spine, in the cervical region. Head drawn sharply backward. Very little motion, in any direction, of the head upon its axis. Extreme sensitiveness of the whole nervous system. Three months time sufficed to produce an entire cure.

Miss ——, aged eight years. Right leg atrophied, ankle joint immovable. Commenced in April last, and is still under treatment. No longer needs any artificial support to the limb, which is growing finely and strong, and every indication present of a speedy and permanent cure.

I have given these few cases out of many, with the hope of calling the attention of the profession to what can be done for this large class of unfortunates. It is not possible to intelligently describe the peculiar processes adopted in each, but I shall be happy to give all desired information, on personal application, or by letter, if practicable.

79 DEARBORN STREET.

CHLOROFORM.

Chloroform, when administered by inhalation during the period of Menstruation, Dr. Kidd affirms, may have the effect of inducing the belief that an assault has been attempted in a criminal way, whilst under its influence. Now, although we can not, from our own experience, connect with certainty the fact of Menstruation with this effect in more than a single instance, we are cognizant of three well-marked cases of the kind occurring in this city, and rumor speaks of several others. We were well acquainted with an elderly gentleman whose wife was so firmly convinced that a dentist had endeavored to take improper liberties with her whilst under the influence of chloroform, that he had much difficulty in convincing her that her husband had not left her side during the whole time. We also knew of a young girl who, after an important operation, during which this anæsthetic was administered, positively affirmed that an attempt had been made upon her chastity by the chief surgeon; and from which trouble might have arisen had not other surgeons been present, and her friends been in the adjoining room during its performance.

The third, a case well known to the profession, in which a respectable woman, whilst menstruating, was put under the influence of chloroform for the abstraction of a tooth, when she afterwards suffered so strongly from a similar illusion that the husband being fully persuaded of its truthfulness, caused the prosecution and imprisonment of the dentist for assault. He was acquitted of the crime, but received a reprimand from the judge for having administered an anæsthetic without the presence of witnesses.

This case elicited much comment at the time, and has had the effect ever since of rendering our physicians more than ordinarily cautious in the employment of chloroform in the absence of the patient's own friends.—*Canada Lancet.*

THE AMERICAN DENTAL ASSOCIATION.

The recent meeting of this Organization drew together a large number of the most eminent Dentists in America, and among them we were pleased to meet Dr. Taft, so long known to us through the able columns of the *Dental Register of the West*, and Dr. McQuillen, more recently associated in the editorship of the *Dental Cosmos*. The sessions were spirited, and occupied in interesting discussions on subjects of practical and scientific importance to the Dental Profession. Several lectures were delivered before the Association, and it gives us great pleasure to be able to present Dr. Brainard's address to our readers.

The hospitals and other points of interest in the city were visited, while Drs. Allport, Davis, and Miller gave very pleasant evening entertainments, and for a time the Association was most happily animated by a social, rather than professional spirit.

Had we the data from which to make it, we should be glad to give an abstract of the transactions, for we have a high regard for the Dental profession, and feel under great obligations to its members for what they have done to beautify the countenance of man, mitigate his pains, and augment the pleasures of his life.

PROCEEDINGS OF THE DEWITT CO. MEDICAL SOCIETY.

The Society met in quarterly session at the office of Dr. Madden, in Clinton, on Monday, the 31 day of July. The President, Dr. Tyler, in the chair.

The minutes of the last meeting were read and approved. Drs. Adams and Madden, the essayists, being unprepared, were requested to read their essays at the next meeting. Dr.

Davis, of Wapello, exhibited to the Society a specimen of monstrosity, giving a full history of the case, for which he received the thanks of the Society.

Dr. Adams made a verbal report of three cases of cerebro-spinal meningitis, which led to a discussion upon the pathology and treatment of this disease, in which most of those present partook.

Dr. Lewis reported an interesting case of diphtheria of a child two years old, giving treatment and favorable result, which called up another animated discussion, in which most of the members participated.

Gunshot Wounds was chosen as the subject for discussion at the next meeting.

On motion, it was ordered that the secretary furnish a copy of these proceedings to the *Chicago Medical Journal* and *Chicago Medical Examiner* for publication.

On motion, the Society then adjourned to meet in semi annual session in Clinton, on the 1st Monday in October, at 10 o'clock, A. M.

At this meeting we had the extreme pleasure of taking by the hand our esteemed friend and fellow member, Dr. John Wright, late surgeon of the 107th Reg. Ill. Vol. Inf., who has just returned from the field, after serving the country creditably for three years. CHRISTOPHER GOODBRAKE, M.D., *Sec.*

PROCEEDINGS OF THE FOX RIVER VALLEY MEDICAL ASSOCIATION.

The Association met in the Common Council room in the city of Elgin, on Monday afternoon, July 3d, 1865. The president, Dr. Tefft, in the chair.

Present, Drs. Tefft, Howell, Burdick, Woodworth, Tyler, Jassoy, Bartels, Hawley, Eddy, Reed, and Young. Minutes of last meeting read and approved. Dr. Howell proposed Dr John Jassoy for membership.

On motion of Dr. Young, Dr. Jassoy was elected, when he came forward, paid the admission fee, signed the constitution, and duly became a member of this Association.

Dr. Hawley announced that the Chicago *Republican* refused to publish *criminal* quack advertisements, and that the Ohio State Medical Association had passed resolutions commending its course, and moved that a committee be appointed by the chair to draft resolutions expressive of the sense of this Association. The President appointed Drs. Hawley, Howell, and Woodworth such committee.

Dr. Tefft read an interesting paper giving an account of a case of cancer of the stomach that had occurred in his practice recently. Dr. Burdick reported a case of malignant tumor of the jaw that was successfully removed by an operation. Dr. Young reported an interesting case of abscess of the lungs in a child. The child recovered after a protracted illness.

Dr. Tefft presented a patient with inflammation and swelling of the inferior extremities of long standing. Quite a discussion ensued as to the pathology of the case, which was participated in by Drs. Howell, Jassoy, Tefft, Hawley, Tyler and Young.

The committee on resolutions reported as follows:

Whereas, the admission by the public press of advertisements of an immoral character, inviting the commission of crime by producing abortion and preventing pregnancy for a consideration, in the shape of pills, potions, drops, etc., is terribly demoralizing and destructive of health and life, we therefore hail with pleasure the promise of the Chicago *Republican* that they will not admit advertisements of this character into their paper; there ore—

Resolved, that the moral integrity and noble stand of its proprietors in excluding this class of advertisements from its columns merits our highest approbation, and we hereby pledge ourselves to take and recommend only such papers as best conform with the principles of morality on this subject, believing that we, as guardians of the public health and conservators of public morals, can not too strongly reprobate the

publication in religious papers of advertisements (for money,) the object of which is clearly the prevention of pregnancy, or the commission of child murder, to commit crime, pander to lust, and that too frequently at the expense of the mothers, as well as their offspring.

Resolved, that the wide-spread influence of a certain looseness of sentiment on this subject should be a matter of great alarm to the philanthropic physician, as well as the parent, and that every public print that will pander to this species of crime, is wickedly suicidal of the best interests of our race, and unworthy to be received into family circles or the patronage of honest men.

Resolved, that we deem those druggists who advertise and sell such preparations as *particeps criminis;* we hereby earnestly recommend them to discard them from their stocks and refuse to furnish them.

The report was accepted and adopted, and the Secretary instructed to publish them in the Chicago Medical Journals, *Republican* and Aurora *Beacon*.

Dr. Burdick moved that a vote of thanks be tendered the proprietors of the Aurora *Beacon* for their generosity and promptness in publishing the proceedings of our Association. The resolution was adopted unanimously.

On motion of Dr. Burdick, the Association adjourned to meet in the common council room in the city of Aurora, on the 1st Monday of October next, at 1 o'clock, P. M.

D. W. Young, M. D., Sec. Jos. Tefft, M. D., Pres.

SUBMARINE TELEGRAPHS.

For 22 or more years, experiments on this subject have been made upon both sides of the Atlantic. In 1843, Samuel Colt, of revolver fame, laid and operated a cable running from the city of New York to Long Island in the bay. In 1856, connected coils of wire, two thousand miles long, covered with gutta percha, transmitted signals to the number of two hundred and seventy per minute, but, upon being submerged, the signals decreased in intensity and grave defects were discovered which required time and study for correction.

The following table, prepared by scientific observers, and compared with other tables extant, gives, perhaps, as reliable figures as have been prepared:

Date when laid	From	To	Time the Cables have been working	Depth of Water in Fathoms	Length of Cable in Statute Miles	Length of Insulated Wire in Statute Miles
			Yrs.			
1851	Dover	Calais	12	....	27	108
1853	Denmark	Across Belt	10	....	18	54
1853	Dover	Ostend	10	....	80½	483
1853	Frith of Forth		10	....	6	24
1853	Portpatrick	Donaghadee	10	....	25	150
1853	Across the River Tay		10	....	2	8
1854	Portpatrick	Whitehead	9	....	27	162
1854	Sweden	Denmark	9	14	12	36
1854	Italy	Corsica	9	325	110	660
1854	Corsica	Sardinia	9	30	10	60
1855	Egypt		8	....	10	40
1855	Italy	Sicily	8	20	5	15
1856	Newfoundland	Cape Breton	7	360	85	85
1856	Prince Edward	New Brunswick	7	14	12	12
1856	Strait Canso	Cape Breton, N. S.	7	....	1½	4½
1857	Norway	Across Fiords	6	300	40	49
1857	Across the mouths of the	Danube	6	....	3	3
1857	Ceylon	Mainland India	6	...	30	30
1858	Italy	Sicily	5	60	8	8
1858	England	Holland	5	30	140	560
1858	England	Hanover	5	30	280	500
1858	Norway	Across Fiords	5	300	16	16
1858	South Australia	King's Island	5	45	140	140
1858	Ceylon	India	5	45	30	30
1859	Alexandria		4	....	2	8
1859	England	Denmark	4	30	368	1104
1859	Sweden	Gotland	4	80	64	64
1859	Folkestone	Boulogne	4	32	24	144
1859	Across Rivers	In India	4	....	10	10
1859	Malta	Sicily	4	79	63	60
1859	England	Isle of Man	4	30	36	36
1859	Suez	Jubal Island	4	....	220	220
1859	Jersey	Pirou, France	3	15	21	21
1859	Tasmania	Bass Strait	3½	..	240	240
1860	France	Algiers	2½	1585	520	520
1860	Corfu	Otranto	2½	1000	90	90
1860	Denmark	(Great Belt)	3	18	28	126
1860	Dacca	Pegu	3		116	116
1860	Barcelona	Mahon	3	1400	180	180
1860	Minorca	Majora	3	200	35	70
1860	Iviza	Majorca	3	500	74	148

Date when Laid....	From	To	Time the Cables have been working.....	Depth of Water in Fathoms.....	Length of Cable in Statute Miles.....	Length of Insulated Wire in Statute Miles
1860	St. Antonio.....	Iviza.....	3	450	76	152
1861	Norway	Across Foirds.....	2¼	300	16	16
1861	Toulon...	Corsica.....	2¼	1550	185	195
1861	Holyhead.....	Howth, Ireland	2	....	64	64
1861	Malta	Alexandria	2¼	420	1535	1535
1861	Newhaven.....	Dieppe	2	..	80	320
1862	Pembroke, W.....	Wexford, Ireland...	1¼	28	63	252
1862	Frith of Forth.....	.....	1	..	6	24
1862	England.....	Holland.....	0½	30	130	520
1862	Across the River Tay.....	.....	1	..	2	8
1863	Sardinia	Sicily	0½	1200	243	243
	Total.....				5625	97832½

Of the cables named in the above table, but few can be called successful, and the application of electrical science to submarine routes of communications is comparatively in its infancy.

The three great attempts at success which have proved their claim to energy, perseverance and glory, even in spite of their want of success, are the Atlantic cables of 1857, 1858 and 1865, each conducted by our countryman, Cyrus W. Field.

The trial of 1857 was made by the Niagara and Agamemnon, which vessels each took half of the cable. The former was to lay the Irish half and the latter the American. On the 5th of August the shore end was laid at Valentia. On the 11th, the Niagara, after laying 334 miles, parted the cable in a swell, leaving but 759 miles on board of her. There were on board the Agamemnon 1,847 miles, or a bare surplus on the two vessels of 207 miles over 1,634 miles, the entire distance between the two countries, hence the attempt was abandoned.

In 1858, the same vessels met in mid-ocean, spliced their two ends of cable, and sailed apart forty miles, when, on the 26th of June, the cable parted. Two days after they again met, united their cables, and after laying 145 miles, the cable again parted. The vessels now recoaled at Queenstown, and again went to mid-ocean and began anew their work, this time with entire success. The *cable was laid*, and the possibility

of communication between the continents was demonstrated. We all remember how the dispatch of Cyrus W. Field on the 5th day of August, 1858, electrified the country, and how the people were fairly beside themselves with joy and admiration.

For nearly two months the two worlds talked to each other with mouth to ear. One hundred and twenty-nine messages were sent from Valentia to New England, and two hundred and seventy-one in the other direction. Thus were four thousand three hundred and fifty-nine words exchanged. The message of Queen Victoria to the President contained ninety-nine words, and occupied in its reception at Newfoundland sixty-seven minutes. High hopes were formed but these were blighted. The fate of the cable of 1858 is thus told by an exchange:

"On September 24th, DeSauty verified the worst apprehensions that had been formed of the failure of the cable, by informing the country that 'nothing intelligible had been received from Valentia since September 1st.' This could hardly have resulted from any injury to the cable, for afterwards, on October 2d, in the course of their experiments, a last communication was received and imperfectly read as follows: 'Two hundred and forty t——k——Daniells now in circuit.' It afterwards appeared that the full message was 'Two hundred and forty trays and seventy-two liquid Daniells now in circuit.' The power thus employed was one thousand times what would be required in an ordinarily well insulated conductor to give perfect signals. Further efforts were therefore abandonod as hopeless. The cost of the cable thus laid was $1,256,250—the total expenditures of the company were $1,834,500."

The cable of 1865 was 2600 miles long and weighed 5,000 tons, and is one and one-eighth inches in diameter.

"The 'core,' or conductor is made of seven fine copper wires twisted into a single strand, add insulated by a compound known as Chatterton's. Around this 'core' are four layers of gutta percha, insulated with the same compound, and in turn enclosed by eleven strong iron wires, each one of which is carefully wound with Manilla thread, and saturated with tar, thus at once protecting the gutta percha and adding strength to the cable. Its strength is equal to a bearing strain of eleven and three-quarters tons. As compared with the tensile strength of the cable of 1858, it is several times greater, while the electrical tests show the present wire to be infinitely superior to that of the cable of 1858.—*N. W. Christian Advocate.*

BOOK NOTICES AND REVIEWS.

Contributions to Practical Surgery, By W. H. VanBuren, M. D., Professor of Anatomy, University of New York. Formerly one of the Surgeons of the New York Hospital, of the Bellevue Hospital, and Vice-President of the New York Academy of Medicine, Consulting Surgeon to St. Vincent's Hospital and the Woman's Hospital, Member of the Pathological Society and the Medical and Surgical Society of New York, Member of the United States Sanitary Commission, &c, &c.

We are gratified to acknowledge the receipt of Prof. VanBuren's contributions to Practical Surgery, issued in pamphlet form of 208 pages.

The object of the pamphlet is very concisely set forth in the preface: "The following Surgical papers have been selected from the professional periodicals in which they were orginally published, and thrown together in the present form, in the hope that they may prove useful to those interested in the pursuit of practical Surgery. Their only merit consists in the fidelity of the record they present of the results of actual practice; and the Author regrets that the unremitting claims of daily professional duty must be proffered in explanation of their obvious imperfections."

The following embrace some of the most important cases: Amputation at the Hip-joint by a modified process, the chief merit of which is rapidity of execution. "Amputation at the Hip-joint is one of the few operations in Surgery in which rapidity of execution would seem to be absolutely essential to success." The "modified process" is a combination of the circular and flap operations, is minutely and clearly described and illustrated by an elegant wood-cut.

Cases of Tracheotomy with observations. Quite a number of operations are given, which were performed for various causes, viz.: croup, foreign bodies in air passages, syphilitic ulceration of larynx, etc., inguinal aneurisms, fibrous tumor of the left ovarium, diseases of the rectum, vesical calculus, etc. The case of artero-venous aneurism with statistics is replete with useful information, especially in regard to the surgical practice which it involves.

In fact, each and every case is full of useful information of a practical character, and after a careful perusal of them, we can honestly recommend the pamphlet to all those practising surgery, especially the junior members of the profession.

A. J. B.

Annual Report of the Provost-Marshal General, Nov. 15th, 1864. With an Appendix embracing the Medical Report of J. H. Baxter, M. D., Chief Surgeon Provost Marshal General's Bureau.

Surgeon Baxter has placed the medical profession under lasting obligation in contributing to medical science, such a variety of invaluable statistical information concerning the diseases and infirmities of mankind.

If space would admit we would gladly reproduce the entire series of tables, 22 in number. The Report is an elaborate and carefully condensed document, and is an honor to the Bureau from which it proceeds. Every page attests to the ability, industry and conscientiousness of the compiler. It is a national record, and as each succeeding year carries us farther and farther from the war, periods of prosperous commerce and peaceful civic employments preparing the way for the advent of the Great American Historian, who is yet to come, and narrate faithfully and with a graphic pen, the record of the tremendous Revolution through which we have so triumphantly passed, this Report, and those which have preceded it, will be of inestimable value.

We cannot conclude our brief notice of this important document without adding our mite to the general meed of praise so freely awarded to Surgeon Baxter, wherever his name and services are known. His knowledge of his profession is only equalled by his executive ability, and those courteous and kind actions which ennoble and befit a gentleman and an American officer.

F.

Graduates of Medical Colleges, Session of 1864–5.—Jefferson Medical College, 136; University of Pennsylvania, 117; Rush Medical College, 108; Bellevue Hospital Medical College, 93; College of Physicians and Surgeons, 79; Long Island College Hospital, 52; University of Michigan, 51; Buffalo Medical College, 50; Ohio Medical College, 46; Albany Medical College, 45; Massachusetts Medical College, 42; Charity Hospital Medical College, 38.

MARRIED.—In Wyanet, Ill., on the 15th of July, by the Rev. Wm. Foreman, F. C. ROBINSON, M. D., to Miss MARY E. HULL, both of that place.

At the residence of the bride's parents, July 11th, by Rev. Isaac Linebarger, A. M., GEORGE W. BEGGS, M. D., of Naperville, and Miss LILLA SIMS, of Plainfield.

Gen. Tom Thumb, his Wife and Baby.—Mr. and Mrs. Stratton, (General Tom Thumb and his wife) have been giving receptions at Calcaldi's Hotel, Dover street, Picaadilly. The General looks remarkably well, and has improved in appearance since we last saw him. He is now twenty-seven years old. His wife is smaller than the General, is dark, with very well-defined features, indeed exceedingly pretty, good figure, and inclined to *embonpoint.* Her age is twenty-three. The baby was also exhibited, which is now twelve months old, weighing seven pounds and three quarters. The diminutive pair seem very proud of their offspring; whether it will be of the same lilliputian stamp we cannot at present say. Mrs. Stratton's sister, aged twelve, was also present. She is smaller still than the General or his wife.—*Lancet.*

CHICAGO

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ORIGINAL COMMUNICATIONS.

EXCISION OF THE OS CALCIS AND PART OF THE ASTRAGALUS FOR CARIES.

RECOVERY WITH A PERFECTLY SOUND AND USEFUL FOOT.

By A. J. BAXTER, M. D., of Chicago, Ill.

The very important part which the foot performs in the human economy; its exposed position, and consequent liability to injury, have obtained for it a large share of surgical attention.

The practicability of conservative surgery of the foot appears to have been first demonstrated by Garengeot, and subsequently dilated upon by Heister—but the credit of the first operation was reserved for Du Viviers, in 1783.

Since which, so numerous and ingenious have been the attempts to save as much as possible of this important member, that nearly every bone, from the metatarso-phalangeal articulation to the ankle-joint, has its peculiar operation and

champion. Yet in spite of all that has been said in favor of this or that operation, they are not all "surgical fixtures" by any means—as our medical journals and the hotly contested debates of medical societies will bear witness. When doctors disagree, who is to decide? If I may be allowed to answer this question, I would say "Statistics." As the real merits of surgical operations are only obtained by comparing the result of a large number of instances in which they have been performed, it is obviously the duty of every surgeon to place upon record a clear and truthful account of all cases that fall within his observation, that each one may contribute his mite to the mass of experience from which alone correct and final results can be deduced.

CASE.—In the early part of January, I was requested by Dr. Payne to see Wm. C———, aged 7 years, who he said had caries of the bones of the right foot, and he feared the ankle-joint was involved also.

At my request, the Doctor has furnished me with the following history of the case:

"When I saw Wm. C——— first, (November 13th, 1864), he had been confined to his bed eight days with what was supposed to be acute rheumatism—but in reality was erysipelas. The scrofulous diathesis was well marked—his father having died of consumption. He was very much emaciated—tongue dry and coated with a heavy brown fur throughout—pulse 140, small and weak—surface hot and dry, with considerable tympanitis, subsultus tendinum, &c., all together presenting rather an unfavorable aspect.

The erysipelas developed itself simultaneously on both superior and inferior extremities—though more marked on the right side. On the right inferior extremity it commenced at the tip of the great toe, and extended four inches above the knee, completely surrounding the limb, with much swelling up to the inguinal region, including the inguinal glands, which were very tender on pressure. On the left extremity it commenced upon the dorsum of the foot, and extended

three or four inches above the ankle-joint. The superior extremities were involved about a like covering about five inches over and around each elbow-joint.

Under the liberal use of tincture of iron, quinine, milk-punch and beef-tea he gradually improved, and by the first of December he was able to sit up—the erysipelas had entirely disappeared, but there remained considerable swelling about the right ankle.

December 2d.—Very much improved generally—though the foot and ankle remain somewhat swollen and tender. Ordered all treatment suspended save the iron and poultice to foot, and discontinued my visits.

December 17th.—Was called again, and found that two abscesses had formed. One on the right side external to the nipple—the other below the internal malleolus of the right foot; opened them, the former discharged a large quantity of pus—the latter very little. After a careful examination of the foot with a probe, came to the conclusion that the abscess was confined to the cellular tissue—as no opening could be found to the bone, ordered dressing of bread and milk poultice to foot, and Syr. Ferri Iod. gtt ter die. At the end of ten days the abscess in the side had entirely healed, the one in the foot appeared nearly so. Again discontinued my visits.

February 25th.—The mother called upon me and exhibited four small pieces of bone which she said had escaped from openings in the foot. Requested Dr. Baxter to see the case with me."

CONDITION AT TIME OF OPERATION.

General health good—says he would be "perfectly well were it not for the foot." The foot and ankle are considerably swollen and club shaped—skin tense glazed and semielastic. There are three sinuses [one in front of the external malleolus—one between it and the heel—the other below the internal malleolus,] from which there is a good deal of sanio-purulent discharge. A probe introduced through any of the openings led to the astragalus and os calcis, which were

softened and carious. Owing to the swelling, it was a matter of uncertainty how far either of the bones were involved—but it was thought that the disease was confined principally to the os calcis and the under surface of the Astragalus, which was substantially correct, only both bones were much more carious than was supposed. After informing the mother of the nature of the disease—and that a small incision in the foot would be necessary—she readily consented.

The patient being chloroformed, by Dr. Payne, the operation was commenced by making an incision from the superior external fistulous opening (*See Fig.* 1.)

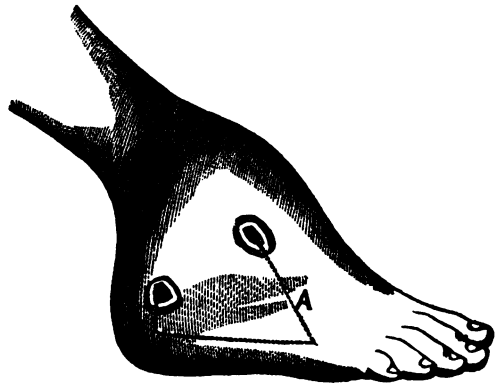

FIG. 1.—Appearance of the Foot before the Operation. A lines of incision.

downwards and forwards to midway between the calcaneo—cuboid articulation and the base of the metatarsal bone of the little toe—thence backwards to within half an inch of the tuberosity of the os calcis and finally upwards along the anterior border of the tendo achillis to the extent of an inch and a quarter.

After raising this flap or curtain as it were and looking in, such an amount of disease was discovered—especially in the astragalus—that it was thought it would be necessary to convert the operation into one of amputation of the leg. But to determine this matter it was decided to turn out the diseased

bones, and see how things would look. Accordingly a small chisel was entered at the calcaneo-cuboid articulation, and the os calcis being very friable was literally "scooped" out. This brought the under surface of the astragalus into full view—and after gouging out the interior of the bone it was found that the entire disease could be removed without opening the articulation—though the crust left was so thin that it caused me great fear for the result of the operation. The tourniquet being loosed, no hemorrhage ensued, the wound was stuffed with lint, a compress and bandage applied, the patient removed to bed and half a grain of opium given. On examining the os calcis, some parts of it seemed to have undergone what Mr. Gant describes as "fatty disintegration," with free oil globules floating about. From this time forward there never was the slighest pain in the foot, or difficulty of any kind.

About two weeks after the operation, his mother took him into the country to visit some relations where he remained about two months. On his return to the city, the wound had entirely healed, and as there was no tenderness, he was running about the str'ts with the aid of a cane. He has frequently been forbidden using the foot so extensively—but as its use is unattended with pain, the injunction goes unheeded. The only sign of the operation having been performed, is a slightly depressed cicatrix [*see Fig.* 2 *A*] on the outside of the foot, with a slight inclination of the foot outwards—the result of his persevering use of the

FIG. 2.—Present appearance of the foot. A Cicatrix.

foot at too early a period. The shortening or flattening of the heel is so trivial that I do not think it will ultimately exceed a quarter of an inch.

CLINICAL LECTURES ON DISEASES OF THE EYE.

By E. L. HOLMES, M. D., of Chicago,
Lecturer on Diseases of the Eye and Ear in Rush Medical College, and Surgeon of the Chicago Charitable Eye and Ear Infirmary.

DISEASES OF THE RETINA AND OPTIC NERVE.

GENTLEMEN:

Referring you to standard works on anatomy for a description of the optic nerve posterior to the globe, I will simply call your attention to that portion of it which will be of most importance in your investigations of diseases involving the nervous apparatus of the eye. This portion is the papill of the optic nerve. After the nerve has passed through the sclerotic and choroid, as described in a recent lecture, it becomes a thin membrane spread over the concave surface of the choroid. The end, as it were, of the nerve, however, can be seen as a well-defined disk, in many cases slightly elevated above the surrounding nervous tissue. This disk is scarcely larger than the head of a pin, yet, when examined with the aid of the ophthalmoscope, it appears much larger.

The retina is a thin transparent membrane, varying in thickness from 1-20 to 1-10 of a line, and may be divided into seven distinct layers. The middle layer is composed of the nervous fibres of the optic nerve, radiating in all directions towards the anterior portion of the eye. The other layers are composed of granules, ganglionic cells, and so-called bacilli and coni. These various elements, as also the separate fibers of the optic nerve, are united by an exceedingly deli-

cate areola tissue, which plays an important part in inflammation.

The vessels of the retina, consisting of branches of the central artery and vein of the optic nerve, branch upwards and downwards, as you can see by close inspection of this preparation of the posterior hemisphere of the globe, and are represented with the papilla in this beautiful diagram of Jaeger.

A line and a half to the temporal side of the optic papilla, at a point corresponding to the posterior end of a line carried through the centre of the cornea and of the globe itself, to the retina, is the macula lutea, the point of most distinct vision.

The retina is held very loosely in connection with the choroid, except at its anterior edge, where it loses its nervous structure and becomes a delicate, transparent, yet quite strong membrane, firmly attached to the ciliary processes. It here divides into two lamellæ, one of which is united to the anterior and the other to the posterior surface of the capsule of the crystalline lens, near its periphery, and is called the zonula of Zinn.

The discussion of the functions of the retina is one of the most interesting subjects in physiology, but would alone require several lectures. I must therefore refer to the chapters on vision in the best works on physiology.

There is a peculiar change in the retina of aged persons, which, like the turning gray of the hair, can scarcely be called a disease, and which yet causes to a certain extent the dimness of vision observed in advanced life. This consists in the deposit among the intranervous areola tissue of greyish colored granules and also of minute glass-like particles, both of which in some cases can be seen by means of the ophthalmoscope in the mottled appearance of the retina.

The diseases of the retina most common, and therefore most important for your consideration, are the different phases of inflammation. The three cases before you to-day

are examples of retinitis in different forms, one from Bright's disease, another from syphilis, and the other obscure in its origin. The precise manner in which the inflammatory process goes on is not understood. It is, however, well established that the areola tissue which holds the different elements of the retina and optic nerve together is first implicated. The cells of this tissue enlarge, new cells are formed, and a yellowish exudation takes place. The final results of these changes depend upon their duration and violence and extent of surface implicated. The layers of the retina nearest the choroid seem most liable to inflammation. Some time may elapse before the vessels of the retina which are in the layers nearer the vitreous humor become covered with exudation to such an extent that they are rendered invisible in an ophthalmoscopic examination. The inflammation may be uniform over the whole retina and papilla of the optic nerve, or it may be circumscribed within very narrow limits. Retinitis is often associated, either as a cause or effect, with choroiditis. The exudation is often mingled with a large number of pigment cells, which can be seen with the ophthalmoscope as irregular brown or black patches, and are frequently found in and around the papilla and around circumscribed portions of the retina affected with inflammation.

Not unfrequently minute points of extravated blood will be observed in the retina. One of the most common abnormal appearances is caused by the presence of minute radiating lines, extending from the centre of the papilla to the ora serrata, obliterating the line of demarcation between the retina and papilla.

The effects of inflammation upon the structure of the retina are various. The disease may be of short duration, terminating in the return of perfect vision. In other cases, it may cause atrophy of the nervous tissue; or it may cover the nervous fibres, with an organizable lymph, which may never be absorbed, and yet, upon the removal of the eye, the substance of the retina within this lymph, may be found to retain its

microscopic appearances intact. The inflammation often produces atrophy of the papilla, and a softening of the lamina cribrosa of the sclerotic, in consequence of which changes, this portion of the globe cannot withstand, even the normal pressure of the nitra ocular fluids, and cupping of the papilla is the result.

Inflammation of the optic nerve may lead, as in that of the retina to atrophy from disarranged nutrition. As in other organs of the body, inflammation of the retina and optic nerve may lead to falty generation.

As the result of retinitis, much oftener as a result of choroiditis, sometimes suddenly and without any known cause the retina may become detached from the choroid, either in small circumscribed portions or over its whole extent.

The causes of retinitis are often very obscure. Injuries, imprudent use of the eyes, syphilis, scrofula and certain affections of the heart, lungs and kidneys, especially Bright's disease, excessive lactation are each sufficient in different cases to induce inflammation of the nervous structure of the eye.

The course of this class of diseases is usually slow, and subacute in character. Acute inflammation, resulting in suppuration is not common. Under suitable treatment, the disease may recover, but it often resists the effects of all known therapeutic agents.

The principal symptom of inflammation of the retina and optic nerve is dimness of vision without any appearance of opacity of the refracting media. If a portion of the retina or a few fibres only of the optic nerve are affected, there will be a dark spot constantly in the field of vision, in the part corresponding to the affected portion. This last symptom is often indicative of detachment of the retina from the choroid. There is generally little pain in uncomplicated inflammation of the retina and optic nerve. The patient is more liable to complain of unpleasant flashes of different colored light. The iris is usualy normal in appearance, and the pupil movable, although more sluggish than in health. Congestion of the conjunctiva and submucous membrane is seldom observed.

The only means of detecting the objective symptoms is by means of the ophthalmoscope. From my previous remarks and from examining at the plates of Jaeger and Liebreich, you already know what these symptoms are. Some of you have had opportunities of observing with ophthalmoscope extravasated blood, detached portions of the retina floating in the vitreous humor, abnormal conditions of the vessels, the presence of pigment, and yellow exudation and the changes peculiar to the papilla of the optic nerve.

The leading principles upon which you must base your treatment are comparatively few.

The eyes should be kept in perfect darkness for ten or twelve days, rather by means of a light, yet efficient bandage, than by confining the patient in a dark room. The eyes should be uncovered once daily in a dark room, for the purpose of bathing.

Local bleeding by means of the artificial leech has been used with great advantage in some cases.

The use of Bichloride for mercury, Iodide of Potash, Permanganate of Potash, Bromide of Ammonium, may be tried according to circumstances.

Strict attention should be directed to the condition of all the organs of the body, and appropriate remedies applied in case of their unhealthy action.

Retinitis dependent upon syphilis, even when the vessels and papilla are to a great extent concealed from view, may sometimes be wholly removed by specific remedies and vision restored.

Even when existing as a complication of Bright's disease, with serious amaurotic symptoms, vision may be much improved temporarily by means, which modify the condition of the kidneys.

It should be remembered that treatment is most frequently followed by favorable results, when commenced in the earlier stages of the disease. If of long duration, the disease must be considered as very grave.

A CASE OF COMPOUND COMMINUTED FRACTURE OF THE HUMERUS, AND SIMPLE FRACTURE OF THE TIBIA AND FIBULA—RIGHT ARM AND LEG.

By E. J. NUGENT, M. D., of Homer, Ill.

On Saturday, 3d of December, 1864, I was sent for in great haste to go to Mr. John Insley's, five miles south-west of this place. On my arrival at the place, I found his son, a boy of about ten years of age, lying upon the bed, very badly bruised and wounded. Upon inquiry in regard to the facts, I learned that they were engaged in threshing, it being a very cold windy day, his son having on a rather long overcoat, was standing not far from the tumbling rod of the machine, and the wind blowing, his coat was caught by the rod and he drawn by the force of its revolutions until he was carried, as they could best judge, some twelve or fifteen times in its revolutions around, when one of the men, seeing his condition, caught the rod, and as fortune would have it, one of the rivets being loose, it was readily displaced and probably the boy's life saved, before the horse-power could be stopped. The boy was carried to the house almost insensible.

I proceeded to adjust and place in position the fractured tibia and fibula by means of bandage, pasteboard splinters, roller, etc., and placed the whole in a neat fracture-box, made especially for the occasion.

There was a wound of the right *arm*, commencing about the inner portion of the coraco-brachialis, involving the integuments and superficial fascia and extending laterly and posteriorly through all of the muscles and soft parts of the arm, ranging posteriorly about midway between the spine of the scapula and his doral vertebra—deep down through the tropezius, and the lower portion of the arm was twisted

around, but no wound of the brachial artery or its sheath. The fracture was at about the surgical neck of the humerus, and but slight hemorrage, the fractured ends of the bone protruded and pierced through the shirt, exhibiting the nature of the fracture.

After stating to his father the serious nature of his wounds, I requested consultation. He would not listen to resection or amputation, but was exceedingly anxious to save the arm.

A messenger was immediately sent for my venerable friend, Dr. Somers, of Urbana, who did not arrive until four o'clock A. M., Sabbath morning. Dr. W. A. Conkey, of our place, also accompanied me in the morning.

10, A. M.—Pulse 80. Dr. W. A. Conkey then proceeded to administer chloroform. About one hour was spent in striving to place him under its influence, but all to no effect. Dr. Somers purchased the chloroform, said it was fresh and good as usual, of common strength. We then proceeded without it. I applied some 10 or 15 interrupted sutures and adhesive plasters, in strips, and brought the wound nicely, and close in opposition, and then produced extension and applied roller and four well padded splinters, and secured the whole by bandages, and placed a wedge-shaped pad in the axilla, and extended the arm and placed it upon a pillow. The little fellow endured his suffering like a man, and rested from the effects of morphia very well afterwards. Left him six powders of sulph. morphia, ½ gr. each, to produce rest and allay pain, and ordered Epsom salts ʒ i. in the morning.

Dec. 5.—Found my little patient had rested tolerably well last night, and the dose of salts being repeated without effect, an enema was administered, which produced rather a copious discharge; pulse 110; tongue coated light-yellowish, some appetite, had eaten some and drank milk; parts swelled considerable.

Dec. 6.—This morning the patient feels very well, having

rested last night, had one operation from the bowels, appetite moderate, pulse 100.

Dec. 7.—To-day applied new bandages, and dressed the arm, wound is suppurating very nice, and looks well; took away some of the sutures and applied adhesive strips anew.

Dec. 8.—Visited him again to-day; he feels very comfortable; bowels regular; pulse 95; tongue clearing off from tip and edges; wound suppurating profusely.

Dec. 9.—Doing very well; rested well last night; appetite improving; ordered light farinaceous diet; milk for drink; dressed the wound; applied new adhesive strips; is suppurating a great deal, and but little tumefaction of the parts.

Dec. 12.—Visit him now every other day; dressed the wound; removed all the sutures; applied new adhesive strips and bandages; wound suppurating very much, and was compelled to change bandages, and pad the splints anew, and changed the bed-clothing, to keep from producing offensive smell.

Dec. 14.—Dressed the wound to day; suppurating nicely; parts look well; bowels regular; appetite good; rests well; tongue almost clean.

Dec. 16.—Dressed wound to-day; doing well and improving fast.

Dec. 18.—Dressed wound; applied all new dressings; wound commencing to unite; parts healthy.

Dec. 20.—Again I visited my little patient and dressed his wounds—all look healthy—suppurating and healing as fast as possible.

And without lengthening the report by naming every visit, I will conclude by adding that I continued to visit and dress the wound every second or third day, up to about the latter part of January, when I was able to place the limb in pasteboard splints and he could use the arm some, it having united firm and solid to all appearance. The external wound healed very nicely, but leaving, as it could not be prevented, a large cicatrix. The placing of this arm in splints was

a great risk, but the father consented and urged us to do so as he would stand for all damages that would occur; and contrary to the expectations of us all, he will have good use of the arm and leg, and a novelty in the line of surgery of the complete union of a compound comminuted fracture; but everything seemed in his favor—cold weather, a healthy, vigorous constitution, and good care and attention, and everything that would conduce to his comfort.

I send you this case, hoping that it may be of some advantage to those who may read it, as it has been to me. Drs. Somers and Conkey have my acknowledgments for their aid and assistance in this case.

The patient can now use his arm about as well as the one not broken, in extension and raising and throwing stones with it, etc.

SELECTED.

DISCUSSION IN THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY, ON THE HYPODERMIC ADMINISTRATION OF CERTAIN MEDICINES.

Charles Hunter, Esq., brought forward the results of his investigations into the effects of medicines when subcutaneously injected. It is now six years since Mr. Hunter proposed the injection of Medicines into the cellular tissue with their general therapeutic object in view. In the case of medicines thus injected for general affects, he called the method the "hypodermic," to distinguish it from the endermic, and from the local injection of Wood. From the endermic method, which term is often and erroneously applied to the hydermic, it differs much; the endermic is a superficial application, which must be uncertain in its action, which may act

powerfully and dangerously, or prove wholly useless. The hypodermic differs from the "method of Wood." The latter plan has for its object the local treatment of a local affection. The injection was supposed by Dr. Wood to be efficacious simply through the localization. Theoretically this method must be limited in its sphere of action to neuralgia or sciatica: to those cases alone accessible to the point of the injecting syringe. Mr. Hunter, in advancing the hypodermic method, maintained that localization of the injection in neuralgic cases was theoretically wrong and practically unnecessary. In 1858 and 1859 he advanced the following propositions:—1. That equal effect followed distant and local injections in neuralgic cases. 2. That by distant injections the ill-effects of repeated localization were avoided, such as local irritation, thickening of the skin, abscess, &c. 3. That diseases can be treated with benefit and curatively by this plan which are neither local nor neuralgic, and which have failed to receive benefit from other modes of medicinal administration. Mr. Hunter is inclined to think that the sickness which used rather frequently to follow the localization of the injection, and which is dreaded as an evil attending subcutaneous puncture, is in part due to the localization of the painful part, as he has hardly found sickness occur at all in his experience of the last few years. The first cases were published in 1859, on which occasion Mr. Hunter proved that diseases affecting the nervous system generally could be treated with benefit by the subcutaneous injection; the cases were serious ones, which had resisted other treatment, and were chiefly cases of insomnia and exhaustion from mania, delirium tremens, tetanus, etc. They exemplified the proposition that, "by the introduction of narcotics into the cellular membrane of the body, we have a mode of attacking and subduing cerebral excitability more rapid, more certain, and more sure in action than by the stomachic doses or narcotics." Cases of spinal irritability and excitement were then treated, and with benefit, in cases in which stomachic doses had failed to relieve. Instances were given of tetanus, chorea, epilepsy, etc. The hypodermic method is considered by the author superior to the stomachic, rectal, and endermic modes of medicinal administration, in emergent cases, in which the indications are for anodynes, antispasmodics, hypnotics, and nerve-tonics. And he has found greater and more permanent benefit to accrue from this mode of treatment than from the stomachic use of morphia, atropia, codeia, and other alkaloids. In many

diseases there can be no certainty about the stomachic dose. In delirium tremens, for instance, the pill, the draught, or powder, may lie in the stomach undigested; it may be vomited; it may be absorbed, partly or wholly, and, if the latter, so slowly as to do no real good. In the meanwhile the life of the patient is at stake, and death from exhaustion may occur before that sleep which would save the patient can be procured. The investigations of the author led him to believe the hypodermic administration of any alkaloid for the above-mentioned purposes to be more beneficial than the stomachic as regards rapidity of action, certainty of effect, purity of effect, greater permanence of effect, avoidance of exhaustion. 1. Rapidity of effect. With morphia sleep can be procured, or delirium quieted, in a few minutes. Atropine will affect the mouth in two or three minutes, and ease the pain of sciatica when injected into the tissue of the arm in five or ten minutes—in less time, in fact, than is usually occupied for absorption into the blood of the remedy from the stomach. 2. Certainty of effect. This, as a rule, ought to follow, for the whole amount (when properly and carefully) injected must be all absorbed ann circulated. But by the stomach one can only guess at the amount absorbed, and consequently one has often to repeat the dose to approach a certainty of effect. Enormous doses and quantities of opium may lie in the stomach doing no good in maniacal and other cases, but rather doing harm through the delay their inertness causes, and the uncertainty as to their absorption. In such cases the hypodermic injection of a small dose will often answer at once, while the opium still lies unabsorbed in the stomach. 3. Purity of effect. As injected into the cellular tissue, so is the agent absorbed, and its direct and sure effects manifest themselves upon the system. The same agent, e. g. morphia, given by the mouth will often cause headache, sickness, giddiness, hepatic and bowel constipation, etc. These ill effects, as they do not, as a rule, follow the hypodermic injection, must be due to the different mode of administration; nor need we wonder that a digesting membrane ever being filled with all kinds of pabulum should modify the vegetable alkaloids whilst chemically acting upon other compounds. 4. Greater permanence of effect. The author has had various cases of neuralgia and sciatica which for years resisted the internal administration of opium, morphia, belladonna, strychnia, etc., which cases he has cured with the injection of morphia, atropia, strychnia, or some other alkaloid. The cure

has no necessary dependence upon the number of injections. One lady who had suffered much from sciatica had no pain for one year after one injection. Another patient has remained free from neuralgia since 1859 after a single injection. In two cases of sciatica, one a hatter, the other a driver to a florist, three or four years have elapsed since they were treated; there has been no relapse in either: both had walked lame and suffered pain for four or five years. The author attributes the greater benefits thus derived, partly to the first three advantages that he believes the hypodermic method to possess, and partly also to the slight shock that the diseased nerves sustain through the rapid way in which the alkaloid is brought into contact with them. 5. Avoidance of exhaustion. This is an important advantage of the hypodermic method, chiefly due to the rapidity of its action. In the violent spasms of lockjaw, of colic, or even of retention, life may be lost by delay; but even in minor cases, the longer the time that elapses before relief of the spasm or pain obtained, the greater the subseqnent exhaustion. Many hours often elapse before any benefit follows the use of stomachic medication, but by the injection of the cellular tissue the desired relief can be obtained in from five to thirty minutes, instead of after many hours. In the case of delirium tremens the continuous muscular excitement—exhausting in proportion to its activity—is often stopped in a very few minutes, and then sleep follows. The tonic effects of certain medicines are more strikingly manifested by the hypodermic than by other modes of administration. So-called tonics may be thus administered with benefit, when they cannot be borne by the mouth. Quinine may, for instance, cause sickness and headache and fail to do good by the mouth, but greatly benefits by the cellular administration.* Agents not called tonics may act as such when thus employed, and when of the class usually called anodynes, may act more tonically than when given by the mouth. In this paper space must limit to a brief notice of morphia, thus used for its tonic effects. Morphia may be used subcutaneously, not to relieve pain, nor stop spasm, nor as a narcotic; but as a nerve-tonic in cases of great nervous exhaustion, or of irritability or great mental depression. In cases, in fact, in which the brain has been overtaxed, and the mental equilibrium lost, as in some cases of melancholia, accompanied by great and unnecessary anxiety, with insomnia.

*Paper by M. Desvignes, Med. Chir. Soc. Reports.

In mania *a potu* and in delirium tremens the author had even used the puncture, with morphia, so to steady and quiet the mind and nerves of the patient as to enable him in a few minutes to walk to his office and go through his duties. In the drunkard, as in the overtaxed and melancholic case, there is great mental excitement, and worry, anxiety, and insomnia. The stomachic anodyne will constantly fail to produce any effects; but the hypodermic dose, even where it fails to give sleep, will almost invariably remove the anxiety, the restless, and the nervous irritability, which are the states leading to exhaustion, and unfitting him for application to work. Thus administered, morphia has nerve-tonic effects, without the disadvantages that so often attend its use when given by the mouth; for it does not interfere with the liver or the bowels, it does not cloud the brain, occasion loss of appetite, nor cause sickness, with the well-regulated dose. In the mentally overtaxed or the melancholic patient, the night administration will not always cause sleep; it sometimes rather arouses the brain—it may even keep the patient awake, in "a calm state of dreamy dcziness," which has the equivalent effect of good sleep the next day; the patient will arise refreshed, mentally stronger, and fit for his day's work. Upon the spinal marrow and its nerves the tonic effects of morphia are more marked when thus administered. The greater permanance of effect when cases have been cured by this plan, and by a comparatively smaller number of doses, seems to indicate that something more than the mere anodyne influence has been at work. A lady, Mrs. R., was subject to neuralgia in 1859. She had been at times relieved by morphia and opium; she was treated once by the morphia puncture, and has not since had neuralgia. Another patient, Mrs. W. W., was subject to repeated attacks of tic doloreux. The morphia injection cured it last year; she has had no return, notwithstanding a trip to St. Petersburg in bad weather. Sciatica is more than simple pain of the nerve; although of long standing, a single puncture with morphia may relieve all the pain, but the stiffness, the lameness, the deficient nutrition, remain for some time. The repetition of the injection will restore power of tone, and if three or four injections are used where these symptoms remain, in long-standing cases, the patients will often say they feel more power return with each injection. Stomachic doses do not produce these tonic effects so strikingly.

The President said the object was one of very great inter-

est, so great that the Council had appointed a committee to investigate it.

Mr. Moore supposed that no new method of treatment had more speedily come into common and deserved repute than that which had been initiated a few years ago by the author. The subcutaneous injection of morphia had from the first been extensively used in the cancer wards of the Middlesex Hospital, and had conferred an amount of relief upon the patients such as no previous method of subduing pain had ever effected. At the same time, he could bear out all that had been said by the author as to the speedy action of the remedy when thus introduced, and as to the common but not invariable exemption of the patients from sickness and loss of appetite after it. He (Mr. Moore) contrasted its effect with the endermic method in a case of cancer involving the nerves of the brachial plexus, and found more relief afforded by Mr. Hunter's plan. He had also employed the hypodermic method in the two arms of another cancer patient, one of which was œdematous, and had found the obstruction of the circulation much delay the action of the morphia. He was therefore disposed to think the general action of the anodyne essential to the relief of pain, as distinguished from its merely local action. But the most important practical use he had made of the hypodermic plan was that of prolonging the chloroform sleep for a long period after an operation. He first employed it more than three years ago, and he believed it had since been adopted by others. He had observed two especial benefits to result from it: one was the prevention of pain, and the other the postponing or obviating of chloroform sickness. When obliged, after removing cancer with the knife, to lay chloride of zinc on the fresh wound, he had injected morphia before the patient awoke from the effects of the chloroform, and had found sleep prolonged many hours, and pain entirely prevented. Sickness had been postponed by it for twelve hours. That it had been entirely prevented he could not assert; but when it did come on it was moderate, and had not occurred till towards the morning following the operation.

Dr. Wynn Williams, whilst agreeing with the author in his chief conclusions, wished to state that he had adopted the subcutaneous injection of morphia since it was first recommended by Alexander Wood, and in his experience local pain was more speedily relieved by injection locally. For instance, when the pain was neuralgic or of the nature of tic, and the

source of irritation eccentric, the injection had better be made as near as possible to the seat of pain, or, at any rate, in the track of nerves having a similar origin. Where the source of irritation was eccentric, the pain depending on disease of the brain or spinal chord, it would answer as well to inject in any other part. In the first class of cases the injection relieved the local pain before it induced sleep by its general action. As regards permanency of action, he did not feel sure that he had caught the author's meaning—i. e., whether he meant the sleep was more continuous, or that the cure was more permanent. He (Dr. Williams) had observed that the effects of morphia given by subcutaneous injection were much more speedy and passed more rapidly off than when administered by the mouth. When thus given, the dose would be larger and the action more continuous, the absorption of it into the system being more gradual. Another good effect was that, given by injection, opium did not constipate the bowels. It would always induce sleep when given in a sufficiently large dose. In a case of cancer of the rectum, which he had attended with Mr. Curling, four grains of morphia had been injected, and this would produce sleep for six hours, with slight intermissions. When the injection was made over the sacrum, the pain was relieved before sleep was induced; if elsewhere, not until the patient went to sleep.

Mr. Savory said all would agree that the hypodermic method was a valuable means of administering medicines, but he thought that some would hardly be prepared to accept all the conclusions at which the author had arrived. In comparing the introduction of drugs by this means with that by the stomach, it would need accurate and extended research before any general results could be obtained, so much must be allowed to the different action of different substances. For example, with regard to rapidity of effect, prussic acid seemed to pass from the stomach at a rate which could scarcely be exceeded, whereas woorara was hardly absorbed at all through the mucous membrane, and between these came a host of substances exhibiting every variety in this respect. Nor was this due to the previous action of the gastric juice, for some substances, such as strychnia, might be kept in it for a long period without any sensible alteration. But then there is another means of administering medicines and other substances—by the rectum. It was perhaps, not generally known that absorption is, under some conditions, more active from the rectum than from the stomach. Not of solids,

for these will remain a long while in the rectum without being dissolved; but when substances are in a state of complete solution, they may pass from the rectum far more quickly than from the stomach. Strychnia, for example, when in solution, will kill more rapidly and in smaller doses, when introduced by the rectum than when taken by the mouth. A fourth of a grain or even less, for instance. when passed into the rectum, will act with greater energy than a grain or more when given by the stomach. No doubt each of these several means is, in its turn, the best—no one can be said to possess a constant or uniform advantage over the others. We have yet to learn under what circumstances and for which remedies this or that method should be chosen; and the subject requires immediate investigation.

Dr. Fuller could bear witness to what the author had stated as to the general effect of injection of morphia. It was quite true that if the injection were made near the seat of pain the relief might be a little more speedy, but we owe to Mr. Hunter the observation that the injection of morphia in any part acted in the same way and to nearly the same extent. This was an important practical point, as the continued introduction at one part might lead to abscesses.

Mr. Hulke said he should not like the meeting to break up with the idea that four grains of morphia might be safely injected. He had known patients nearly lost by the injection of two thirds of a grain.

Dr. Wynn Williams explained that in his patient's case the large dose of four grains had been gradually arrived at after two years' treatment. He did not mean in any way to imply that this was a safe dose. Indeed, the dose he generally commenced with was only a quarter of a grain.

Dr. A. P. Stewart could not admit Mr. Moore's experiment on the anasarcous compared with the healthy limb, as conclusive regarding the local and general action of morphia; for in the anasarcous limb there was a total arrest of absorption, without which there could be no therapeutical action. As to the inconvenience of hypodermic injections, the could not speak so lightly of them as others did. He had repeatedly seen nausea, vomiting, vertigo, and even mild delirium, following the subcutaneous injection of morphia. As regards the use of quinine, he had on a former occasion made some inquiry as to effects, both local and general, of its hypodermic use, the author of the paper (M. Desvignes) having been silent as to the existence of any inconvenience, and he (Dr.

Stewart) had hoped that Mr. Moore would have given the Society the results of his recent and very interesting experiments. He (Dr. Stewart) had often administered remedies by the rectum. His favorite method of treating intestinal obstructions (ileus) had long been the injection of extract of belladonna in doses of two or three grains. In one case, seven or eight grains had been given by mistake. The absence of any serious symptoms was probably attributable to the great abdominal distension, which prevented absorption taking place to any extent; but in other cases, after repeated smaller doses, the wild and extravagant delirium of poisoning by belladonna had been fully developed. He was not aware of the fact stated by Mr. Savory, that strychnia acted more powerfully when given by the rectum. But such a conclusion was not warranted by the fact of the prompt and powerful action of one-sixth of a grain so administered, for he (Dr. Stewart) never gave by the mouth a larger dose than the fiftieth of a grain to begin with, and never increased it beyond the twenty fifth, and from these doses he obtained very decided results. As regards the general subject of the hypodermic injection of remedies, he thought the Society should suspend judgment until the committee had reported on it.

The President asked if the results of Mr. Hunter's paper had been drawn from public or private practice, and if patients in private practice objected to the treatment.

Mr. Hunter, in reply to the President, said that since the cases which he had treated at St. George's Hospital, he had drawn his conclusions upon patients of a public charity (the Royal Pimlico Dispensary,) but had also largely used the treatment in private practice. For the most part he found no objection on the part of patients to the use of the plan. A nervous patient might occasionally have objected to it, having heard it called an operation. It was one of the simplest kind, giving hardly any or no pain, and causing no irritation, if the operator attended to simple rules. The puncture was almost painless if made in the outer part of the arm; it was more painful if localized to the tender neuralgic site. In answer to Dr. Williams, the author said he had employed the treatment in neuralgia of centric and eccentric origin. He had not found, taking the cases collectively, that the results were more favorable, if localized, in those of eccentric origin. In incurable neuralgia of centric origin the relief was the same in most cases, wherever injected. Sleep was not at all a necessary result of the morphine puncture; many patients

did not sleep from it. The injected alkaloid seemed at once to be engaged in removing the pain or the mental excitement existing at the time of the puncture. Sleep might follow or not, according to the dose. In reply to Dr. Stewart, Dr. Hunter said that sickness and giddiness might certainly occur from the use of the morphia, but such cases were quite the exception. They might result from the injection of a dose too large for the nature of the case, or from some idiosyncrasy of the patient. He had very rarely found sickness to follow the injection in his practice of the last few years (though using the plan daily), since he had injected smaller doses of the alkaloids, and had for the most part ceased to localize. He thought four grains a fatal quantity to inject beneath the human skin, except with the well-accredited understanding that the patient had been accustomed to a much larger dose by the mouth. He had himself injected more than four grains at a time, but the patient had for many years taken by the mouth thirty grains of morphia daily. One grain of morphia was quite the maximum for a first injection, and then only in most urgent cases—as in delirium tremens with great excitement. Half a grain of morphia was a full injecting dose for the treatment of most cases: a much less quantity was often quite sufficient. He quite believed in greater permanence of effect by this plan than by the stomachic dose. Atropine, for instance, had often failed, when given daily by the mouth, to do more than palliate; but the same dose (a thirtieth of a grain) by the cellular tissue would perhaps succeed if administered once or twice. With regard to Mr. Savory's observations, the author wished him to understand that the treatment as proposed by him was only for *emergent* cases; as for those requiring speedy relief from pain, or for those in which medicines failed in their effect as usually given. He could cite one or more instances of each class of diseases mentioned in the diagram in which stomachic treatment had previously failed to relieve the patient; and in most cases the same alkaloid was used hypodermically with permanent effect. Mr. Hunter readily allowed that very speedy action followed the rectal administration of some medicines. It might be even quicker than the hypodermic method; but he considered it a less certain and less liable mode of introducing the medicine. It was one which could not always be recommended for cases of the description for which the hypodermic plan seemed to be well adapted.

ARSENIC EATING.

Dr. Maclagan, of Edinburgh, on a visit to Styria in the spring of this year, obtained conclusive evidence of the existence of this practice, and has published in the *Edinburgh Medical Journal* a circumstantial account of what he saw. We quote one case, in which it will be seen no jugglery could have been practised: "Mathias Schober, a healthy-looking, fresh-complexioned, fairly muscular young man, of the age of 26 years, and about five feet nine inches in height, a native of Liegest, and employed as a house servant there, said he had taken Huttereich for about a year and a half—not, however, with arsenic, but the yellow arsenic, or orpiment, of which he took a specimen from his pocket and showed it to me. Of this I retained a piece for chemical investigation. He informed me that he took the arsenic in order to keep strong, though he had never suffered from ill health. He said he had never experienced any bad effects, even when he first began using it; that he had at first taken rather less than a grain every fortnight; that he now took it twice a week; and that on omitting to take it for any longer period he experienced a longing for it, which was relieved by a repition of the usual dose. His reason for taking the orpiment instead of white arsenic was, that it was more easily procured; but having professed himself quite indifferent whether it were arsenious acid or the sulphuret, Dr. Knappe produced a paper containing the former (of which I also kept a sample), and having asked him to choose out a piece such as he was in the habit of taking, it was weighed, and found to be nearly five grains. We had no finer weight than one grain; but the piece of arsenic was much over four, though less than five. Dr. Knappe, having carefully ground this to powder on a clean piece paper, it was transferred to a small piece of plain white bread, about as large as a man's thumb-nail, and this the doctor put into his mouth. Schober chewed it and swallowed it, and then swallowed another portion of bread the same size immediately after. This was at 9:30 A. M. He stayed with us a few minutes, but he had to return to his work, promising, however, to come back in a short while.

This he did at 11:30, two hours after, and made water in my presence to the amount of what I estimated at twenty-eight ounces, into a vessel previously carefully cleaned, and the urine was put into bottles thoroughly washed by myself. Unfortunately, in the hurry of my departure, in trying to pack these bottles into my hat-box, I broke one, and thus lost part of the urine. Since my arrival in this country I subjected the contents of the two remaining bottles to chemical analysis, adopting the distillation process of Dr. Taylor as the most convenient way of separating arsenic from the organic matters of the urine. For this purpose the urine was carefully evaporated to dryness in a clean retort. The nearly dry residue was covered with strong hydrochloric acid, and distilled into a well-cooled receiver. The product, amounting to about half an ounce, was a clear, feebly pinkish fluid, thirty minims of which, when treated both by Reinsch's and Marsh's process, gave very characteristic arsenical deposits. Schober also came the following day to see me, having taken no more arsenic since the dose which he had swallowed before me twenty-six hours previously. I again secured some urine which he passed in my presence, and this, when chemically examined as above, also yielded arsenic freely." Mr. Maclagan adds—"It is evident that the confirmation of the existence of the practice of arsenic-eating must lead us to modify some of the opinions that are entertained with regard to the influence of habit on the action of poisons. It has long been notorious that, by habit, the human body may be brought to bear with impunity doses of organic poisons, such as opium, which, to those unaccustomed to them, would certainly prove fatal; but 'it has hitherto been considered by toxicologists that, except within very narrow limits, habit appears to exercise no influence on the action of mineral poisons.' (Taylor "On Poisons," p. 89.) Though the experiment of M. Flandin, by which he proved that he could bring dogs to bear fifteen grains of arsenious acid in powder in twenty-four hours without injury to their appetite or health, and the practice of administering arsenic to horses, have long been known as pointing rather in the contrary direction, this has been supposed to be due to some peculiarity in the constitution of the lower animals. The facts which have been ascertained with regard to the Styrian arsenic-eaters, and which the above observations confirm, entitle us to maintain that the modifying effect of habit is not confined to organic poisons, but extends to those of mineral nature—at all events, to arsenic." —*Chem. News*, July 21, 1865.

ON THE VEGETABLE ORIGIN OF DIAMONDS.

We have already mentioned that Professor Goeppert obtained the prize offered by the Dutch Scientific Society for an Essay on the vegetable origin of Diamonds, and we are now able to give a short abstract of this highly interesting essay.

Since Lavoisier showed that diamonds were composed of pure carbon, very different opinions have been entertained about their origin, some believing them to be produced by Plutonic, others by Neptunian agency. Newton inclined towards the latter view, and Brewster agrees with him. In 1842 Liebig pronounced the formation of diamonds to be the result of an uninterrupted process of chemical decomposition. "Imagine this chemical decomposition taking place in a fluid rich in carbon, out of which will issue, as a final result of its chemical decomposition, pure carbon, and that in a crystallized form." Indeed, a high temperature is adverse to the formation of diamonds, as diamonds become black when subjected to a high degree of temperature, and, according to Despretz's experiments, they are even converted into graphite and coke. The black diamonds, or so-called "carbonates of Bahia," are in part a mixture of uncrystallized carbon and diamonds, as shown by the process of combustion, to which, at my desire, they were submitted by Professor Lowig. That diamonds originated under Neptunian agency is further proved by the frequent occurrence of crystals in them. I have seen them in hundreds of different specimens, and even small cavities containing them. In my essay I have given ample proof that at one time diamonds were soft bodies. Hitherto only one diamond, in the possession of the Emperor of the Brazils, has been known, on which the impression of a grain of sand was visible. I have before me a rhombic dodecahedron, on the whole surface of which impressions of grains of sand are visible, and a similar crystal of the black diamond on which the same impressions exist. In a third there is a cavity with bent and broken crystals of an unknown kind. Two others, an octahedron and a rhombic dodecahedron, have on their surface deep impressions of crystals which are not those of

diamonds. The Neptunian origin of diamonds can therefore no longer be doubted. G. Bischof also thinks that, after the discovery of iron pyrites in the diamond, any doubt respecting the formation of diamonds in a moist way has been dispelled. In close connection with these observations is the question about the vegetable origin of diamonds, which in a measure was answered by Newton, who regarded them, on account of their great power of reflecting light, long before their true chemical condition was ascertained, to be coagulated fatty or oily bodies. Jameson and Wilson endeavored to prove this theoretically, Petzholdt practically, by the vegetable cells found in the ashes of diamonds. The vegetable origin of coal and anthracite, and their sedimentary formation, having been thoroughly established, I examined, starting from this point, graphite (hitherto regarded as being without structure, but doubtless having a Neptunian origin) and the diamond; and by the experience I have gained from observing, for a number of years, chalcedony and amber, I am able to distinguish sufficiently between mechanical formations and formations of a vegetable origin. I have not yet attained any results with respect to graphite, but in diamonds I have found numerous foreign bodies enclosed, of which, if they cannot be said to be evidently and undoubtedly vegetable in their origin, it would on the other hand be difficult to deny their vegetable nature altogether. The careful figures which will accompany my essay will enable others to judge on this point, and will, if nothing else, open up the way for further researches.—*London Pharm. Journ.*, July 1, 1865, from *Amer. Journal of Pharmacy.*

ON THE DYSMENORRHŒA, METRORRHAGIA, OVARITIS, AND STERILITY ASSOCIATED WITH A PECULIAR FORM OF THE CERVIX UTERI, AND THE TREATMENT BY DIVISION.

By ROBERT BARNES, M. D.

The author described and figured the form of cervix uteri which projected into the vagina as a conical body, the vagina appearing to be reflected off at a point nearer the os internum

than normal. The os externum was usually minute, scarcely admitting the uterine sound. This (the os externum) was the real seat of constriction. The os internum nominally was a narrow opening; and in these cases of dysmenorrhœa and sterility it was commonly found to be of normal calibre. It was, therefore, unnecessary to divide it, on account of the close proximity of the large vessels and plexuses running into the uterus on a level with it. The author maintained that t is form of cervix was a cause also of retro- and peri-uterine hæmatocele, and of peritonitis. All these consequences might arise in single women. In the married state the evils enumerated were aggravated, and new ones arose. Women with this peculiarity were generally sterile; and if they became pregnant it was early in life, before the further consequences were developed. These were flexions, deviations, inflammation of the cervix and body, hypertrophy. Discussing the question of treatment, the author showed that dilatation was unsatisfactory; that incision of the os internum, as practised by Dr. Simpson's single bistourie caché, and by Dr. Greenhalgh's double bistourie caché, was unsafe and superfluous. He objected to the latter instrument, especially, that it must cut as it was set—that it was too much of an automatic machine, not leaving scope for the judgment of the operator. His (Dr. Barnes's) own instrument, constructed like a pair of scissors, acted on the same principle as Dr. Sims's; it divided only the os externum, so as to open the cavity of the cervix; the part to be cut being first seized between the two blades, the operation was perfectly free from risk; the hemorrhage was usually slight, and a good os was made. He had performed the operation many times, both in hospital and private practice, and was well satisfied with the results. One advantage of incision over dilatation was, that it relieved the engorgement and inflammation.

In illustration of the behavior of the conical cervix uteri under labor, two cases were narrated. In one, the cervix and os uteri had returned to their original state, although a fœtus of four-and-a-half or five months' development had been expelled through them. In the other case it was necessary to open the cervix artificially by means of the author's cervical dilator and incisions in order to deliver a full-grown child. In both cases pelvic cellulitis followed labor.

Dr. Baker Brown thanked Dr. Barnes for having brought the subject forward. He agreed with most of what had been

stated in the paper; was opposed to dilatation as peing inefficient and temporary. He described his mode of operating, which was to place the patient in the lithotomy position, and having introduced a bent speculum, he seized the os with a pair of forceps, and divided it with Simpson's hysterotome. He never divided the internal os; always used a plug of oiled lint to prevent hemorrhage. He regretted that the operation had lately been condemned by a high authority, but believed it was the only efficient and permanent remedy for these painful affections.

Dr. Greenhalgh was surprised to hear the President's opinion that the seat of stricture in these cases was mostly at the external os. He (Dr. Greenhalgh), on the contrary, expressed his conviction that in the great majority of cases the stricture is situated at the internal os, and consequently he recommended division of the internal as well as the external os. After division he usually introduced one of his bilateral expanding stems, which keeps up steady dilatation and prevents contraction. As regarded hemorrhage, which some appeared so to dread, he had never but once met with it, though he had operated in nearly one hundred cases. He always used his own bilateral instrument, which cuts both sides at once. The advantages of his plan of operating were, he believed, extreme exactitude, facility, painlessness, and the avoidance of any personal exposure. He expressed his surprise at the remark of Mr. Brown that he never divided the internal os, when he (Dr. Greenhalgh) had seen him on several occasions freely incise the internal os in the cases under consideration.

Mr. Baker Brown, in answer to Dr. Greenhalgh, said that that gentleman must be mistaken in what he had seen at the London Surgical Home. He repeated that he never in cases of dysmenorrhœa cut through the internal os. Dr. Greenhalgh was evidently confounding this operation with that for fibrous tumor, retroversion, retroflexion, &c., of the uterus, in which he (Mr. Brown) incised freely, and generally through the internal os.

Dr. Routh fully confirmed Dr. Greenlagh's views. For his own part he believed in by far the majority of cases the obstruction was at the *inner* and not the *outer* os; although he did not deny that in some cases of conoid cervix it was present at the external os. He agreed with Dr. Gream in believing that Dr. Sim's plan of operating would occasionally leave a deformed cervix for life; and he did not think it was necessary to cut through the entire cervix. The instrument

Dr. Greenhalgh had invented obviated all danger from hemorrhage. The same was true of his (Dr. Routh's) instrument, which he, however, preferred, because on the bend, and therefore more easy of application in *flexion* cases. A little bleeding was salutary. In most of these cases there was a complication of congestion, which the very incision, by the subsequent hemorrhage, relieved. But there was no doubt that such incisions, however freely made, had a tendency to contract again. Hence it was necessary to keep the cut made patent by some internal uterine pessary, and for some time, it might be for months, so as to allow it to become properly lined with mucous membrane and incontractible. He knew several persons now walking about London with these. In other cases their removal had been followed by conjugal relations and pregnancy, though previously sterile for years. Of the use of sponge-tents and other modes of artificial dilatation, in these cases, he spoke disparagingly. He had seen cellular abscess and death follow their use. They should be used with the greatest caution. He also believed cases of dysmenorrhœa were more common than was generally supposed. Not only was the seat of obstruction more frequently at the *internal* os than the *external*, but, indeed, in many cases, the external os was patent and abnormally so, as shown by Dr. Henry Bennet. And there were many, and by far more numerous, cases of dysmenorrhœa which were in no way due to stricture at either os. As these cases were not, however, referred to by Dr. Barnes, he did not allude to them further. * * * * * * *

Dr. Graily Hewitt thought that the two questions of the treatment of dysmenorrhœa and of sterility by means of incisions of the cervix uteri had been too much mixed up together. He would say a few words first respecting dysmenorrhœa. He believed that in bad cases of dysmenorrhœa the condition present was frequently retention of the fluid in the uterus, and that this retention caused the pain; and he had been at some trouble to prove this. But, on the other hand, he also thought that the condition was capable of being relieved, in most cases, without resort to mechanical treatment of the cervix uteri. The great thing was to diminish the flow of blood, and this could be regulated by general measures; but that there were a few cases in which such general measures were useless he admitted. He differed from the President in reference to the most common seat of the constriction; for although there were cases in which the os uteri was con

genitally extremely small and narrow, yet in the larger number of cases of dysmenorrhœa the impediment was situated at the junction of the cervix with the body of the uterus. With regard to the best method of applying mechanical relief when such was required, he thought that cases might be treated on their own merits. Where the cervix was hard and dense, the cutting operation was most indicated, the difficulty being here the greatest; but under other circumstances he preferred the use of tents as dilators. The sea-tangle tent was, he considered, a perfectly safe means of dilating the cervix uteri; but, he would repeat, the cases were few requiring this treatment. As to the mode of incising the cervix or os uteri, here again the operation must be selected according to the case: no one operation would be suited to all circumstances. He would next say a few words on the subject of sterility. It was undoubted that in certain cases the cure of sterility could be effected by dilating the cervix uteri, and much had been said as to the superiority of one mode of dilating over another. The fact was, that so long as the canal of the cervix was a little enlarged, whether by incision or dilatation, the necessary end would be served. The great object was to secure a tolerable patency of the canal at about the menstrual period, when conception was most likely to occur. Supposing the sterility to be cured, the dysmenorrhœa which might be associated with it would be also, in all probability, permanently relieved.

Dr. Marion Sims was surprised at the great difference of opinion expressed by previous speakers as to the seat of the obstruction, but he agreed with those who thought it was at the lower orifice. He then went into some statistical details of his own practice, and laid great stress upon the frequency of curvature of the cervix as a cause of obstruction at the internal os. Though it might, he thought, lead to an actual narrowing of the canal, yet he believed this was an extremely rare occurrence. But in cases of induration and conoidity the os tincæ was abnormally contracted in every case he had seen. Indeed, a conical indurated cervix was incompatible with a normal os tincæ, the existence of the one almost necessarily implying that of the other. With regard to cases referred to by Dr. Gream and Mr. S. Wells, in which the tissue of the cervix had been too largely incised, so that the lips of the os were everted and rolled backwards, he had never seen any such result after his method of operating, but had witnessed it after the metrotome caché; and he attributed it to this—because it cut deeper into the sides of the supra-vaginal

portion of the cervix, and so divided the circular muscular fibres, which are naturally antagonistic to the longitudinal fibres. By his (Dr. Sims's) plan of operating, the incisions upward were more superficial, though the opening of the os was about the same in both methods.

The President, in closing the discussion, said that he only directed attention to one class of cases of dysmenorrhœa—that, namely, associated with the peculiar projecting form of cervix uteri, and usually attended by sterility. This was the form that required treatment by incision. The obstruction that required division was the os externum or vaginal portion. The os internum normally was a narrow canal. Dr. Greenhalgh had passed his instrument through it as preliminary to his operation. If it admitted this instrument, the os was of full normal size, and could not require cutting. His (the President's) instrument and operation were perfectly safe and efficient. He thought, after hearing Dr. Sims's remarks, that he had underrated the importance and frequency of flexion at the neck as a cause of obstruction.—*Proceedings of the Obstetrical Society of London*, in *London Lancet.*

ON DIABETES AND ITS TREATMENT.

By Dr. H. BENCE JONES, A.M., F.R.S.

Each grain of starch that is taken as food, when acted on by the saliva or pancreatic fluid, is converted into sugar and becomes a source of fuel or power and ultimately passes out of the body as carbonic acid and water.

In diabetes the starch is still changed into sugar: but in the circulation and in the extravascular or parenchymatous structures the further change is partly or wholly stopped; more or less of the sugar remains as sugar, part reaches the kidneys and is thrown out in the urine, part exists in the structures unchanged; and thus the system is deprived of one part of that conversion of latent into active force on which the nutrition and power of the organ depends.

In the body or out of the body, when once a series of chemical action is set up, the series tends to become continu-

ous; it propagates itself, unless a change of conditions occurs. For example, grape juice will remain as grape juice, if kept from the action of other substances. Under well-known conditions it will ferment, and continue fermenting, as long as sugar, and ferment, and the proper temperature are present. If the conditions are slightly varied, variations in the products will be observed. The series of actions will not pass rapidly from grape juice to alcohol, to vinegar, or to putrefaction; but according to the conditions one action or another action will be set up or will continue as long as that action is possible.

In health and in diabetes the sugar is subjected to different conditions. In health the chemical changes are propagated and continued to their full extent; whilst in diabetes the conditions necessary for perfect change are wholly or partly wanting. These conditions, on which the changes depend, are chiefly three. 1st. The proper temperature; 2d. The presence of a not immoderate quantity of sugar; 3d. The presence and activity of a ferment.

On each of these conditions a few words are necessary.

First, the internal temperature of the body, under all circumstances, is subject to so small a variation, that at present there is no proof that such a reduction can occur as can check the chemical actions in the human body, though under certain circumstances smell animals can be exposed to cold so that sugar may be made to appear in the urine.—(*Proceedings of the Royal Society, December* 15, 1864.)

Secondly, by the most careful investigation, I have satisfied myself that Professor Brücke is right in saying that healthy urine contains sugar—that is, the amount of sugar derived from the food, or from the changes going on in the textures, is at all times more than can be entirely changed in the circulation and in the tissues. If, then, a considerable amount more is thrown into the circulation, some of it will pass out in the urine. Thus an injection of sugar into the rectum when absorbed causes temporary diabetes; so, also, large quantities of sugar, fruit, and farinaceous food tend to produce diabetes. Thus, also, if Bernard's amyloid or glycogenic substance were produced in excess in the liver, diabetes would result.

Thirdly, the ferment, the prime cause of change, has not yet been insulated. Whether it be the albuminous substance of the saliva or pancreatic fluid, or some other of the many albuminous substances in the blood, it requires for its action heat, the presence of alkali, and an undisturbed circulation of the changing fluid.

With regard to the effect of alkalies, something will be said when I speak of the treatment of diabetes; but concerning the influence of unobstructed chemical action some remarkable physiological experiments must here be mentioned, because they not only furnish the most striking illustrations of the relations of mechanical to chemical disease, but because they also help to account for the effect of sudden mental shocks and nervous disturbances, which do so much harm to the diabetic patient.

Bernard made the great discovery that the mechanical injury of the floor of the fourth ventricle alters the chemical actions going on in the body so as to cause sugar in excess to appear in the urine. This is a most remarkable demonstration of the relation which subsists between mechanical and chemical actions in the living body.

M. Schiff, in his "Untersuchung uber Zuckerbildung" (1859), states that this diabetes results from injury of the vaso-motor nerves of the abdominal organs which arise from the thalami optici and the crura cerebri—*partent des couches optiques et des pedoncules cérébraux;* and he also shows that by injury of other parts of the nervous system temporary or permanent diabetes is produced.

Thus cutting the posterior roots of the nerves arising from the cervical portion of the cord, leaving the anterior roots untouched, causes temporary appearance of sugar (irritative diabetes): whilst by division of the anterior roots on a level with or above the fourth cervical vertebra, permanent (or paralytic) diabetes results. These injuries, he says, cause an irritation or a paralysis of the vaso-motor nerves. The vessels of the liver become dilated and distended; and as a consequence there is an excessive secretion of sugar by the liver.

The permanent diabetes may be thus occasioned: but it is far more probable that the temporary diabetes is owing to the mechanical injury of the nervous system so affecting the vessels that the chemical changes are interrupted. The same phenomenon is seen in every fermentation. The chemical action is temporarily stopped when the fermenting fluid is disturbed by any sudden change.

These conditions of change may in diabetes be affected singly or all simultaneously. When the affection reaches to the extent of stopping the chemical change in the vegetable or animal sugar in the body, diabetes, intermittent or permanent, is the result.

That the disease is only a little way distant from health is

shown by the existence of sugar in the urine in the healthy state; so that a small quantity of sugar in the urine is no proof of disease; and here, as elsewhere, there is no defined limit where health ends and disease begins.

Diabetes is the arrest of a healthy state; an increased quantity of sugar appearing in the urine, because the actions that constitute health are stopped.

In perhaps half the cases of diabetes the arrest of change in the food-sugar constitutes the complaint. This is proved by the fact that when a strict anti-farinaceous diet is observed the abnormal amount of sugar ceases, and the patient is well as long as he keeps to the strict diet. When this fact was published in 1806 by Dupuytren and Thenard, they used these words:—"Que le traitement qui consiste surtout dans un régime purement animal a le même degré d'efficacité que le quinquina dans les fièvres intermitentes."—(*Annales de Chemie, vol.* 59, p. 45.)

But it was soon found that cases occurred in which a strictly anti-farinaceous diet, consisting of animal food and water, did not stop the sugar in the urine. For days and weeks not a grain of vegetable starch or sugar may be taken as food, and yet sugar in excess will exist in the urine. Whence does this sugar come? It must either be taken in the animal food or it must be produced in the body.

Previous to Bernard's discoveries, this production of sugar when no vegetable food was taken admitted of no explanation. Now, the discovery of the amylaid substance in the liver, and of inosite in the muscles, lungs, brain, and other organs, gives a full solution of the difficulty. In the chemical changes going on in the body, animal starch is formed in the liver, and in other organs as in the prostate gland, and sugar in the muscles; not as in vegetables, by the fixation of carbon and the decomposition of water by the action of light, but more probably by the gradual splitting up of the higher organic compounds of the organs whilst performing their functions.

The good effect of an anti-farinaceous diet in some cases, and its want of effect in others, marks the two great divisions of the disease—the two stages in diabetes. In the first stage vegetable sugar alone ceases to go through the healthy chemical changes, whilst the animal sugar is entirely changed; in the second stage animal sugar as well as vegetable sugar are more or less unchanged. It may be concluded that animal sugar is more readily changed than vegetable sugar; and

when in diabetes an anti-farinaceous diet has no marked effect, then the conditions of change of the sugar in the body are furthest from the healthy state.

There is sufficient evidence that diabetes does not always progress from one stage to the other. The disease may halt anywhere in its progress, and remain stationary for years, or get better or worse. A gentleman has consulted me for the last four years occasionally; he is now fifty-seven. When I last saw him the specific gravity of the urine was 1020, about three pints in twenty-four hours, containing about four grains of sugar to the ounce. He had been diabetic for twenty-nine years, during which time he married, and has now healthy children grown up. When he takes care about his diet, the sugar and symptoms vanish, but when careless, the symptoms return, and the sugar can be found in the urine.

Diabetes, then, in its mildest or first form, is the loss of power to change the sugar of the food; in its more advanced or more intense form, it is the loss of power to change the sugar produced in the organs and textures of the body, as well as in the food. The changes in the animal as well as vegetable sugar are arrested.

[Almost every remedy in the Pharmacopœia has been tried with the view of arresting the excretion of sugar, but none has any constant effect. Meanwhile, the effect of diet is far beyond that of any known remedy.]

An anti-farinaceous, or, in other words, an anti-saccharine diet will remove the sugar from the urine, and stop all the symptoms of the complaint in all those cases in which the power of consuming the animal sugar remains unaffected.

Even when the consumption of the animal sugar is imperfect or impossible, an anti saccharine diet will lessen the thirst, the flow of water, the dryness of the mouth, and even the constipation, and check, though it may not stop, the waste.

The simplest formula for the diet may be thus stated. All animal produce, including fish, flesh, fowl, game, eggs, cream, and meat soup should be taken; and all vegetable food that contains starch, dextrin, and sugar should be avoided.

As generally it is of the utmost importance to shun the forbidden food, I shall dwell upon it first.

The vegetable substances that contain most starch, dextrin, and sugar are rice, maize, arrowroot, sago, potatoes, oatmeal, peas, beans, bread, biscuit, toast, maccaroni, vermicelli, and all confectionery.

Fruits are even worse than vegetables. Apricots, plums, peaches, cherries, pears, gooseberries, are nearly as bad, and some worse, than rice and maize. Stout, porter, and ale, cider, port, Madeira, champagne, and sherry are more or less highly saccharine; cocoa and chocolate contain nearly 20 per cent. of starch and dextrin naturally, and more is often added.

The harm of each of these substances may be determined by the amount of starch, dextrin, and sugar they contain.

The following table, in which the fruits and farinaceous vegetables are taken as perfectly dry, will answer many questions regarding the diet of a diabetic patient:

	Amount of Starch, Dextrin or Sugar.
Ripe dry Apricots, . .	about 93 per cent.
" Plums, . . .	" 92 "
" Peaches, . .	" 86 "
" Cherries, . .	" 85 "
" Pears, . . .	" 84 "
" Figs, . . .	" 79 "
" Gooseberries, .	" 37 "
Dry Rice, ...	" 90 "
" Maize, ...	" 88 "
" Arrowroot, . . .	" 77 "
" Potatoes, . . .	" 76 "
" Oatmeal, . . .	" 70 "
" Peas, ...	" 67 "
" Beans, ...	" 67 "
" Bread, ...	" 61 "
" Milk, ...	" 21 "
Stout, . .	about 45 to 64 grs. of sugar per ounce.
Porter, .	" 23 " 40 " "
Ale, . .	" 12 " 45 " "
Sweet Cider,	" 18 " 44 " "
Port, . .	" 16 " 34 " "
Madeira, .	" 6 " 66 " "
Champagne,	" 6 " 28 " "
Sherry, .	" 0 " 12 " "

If dry rice contains 90 per cent. of starch, dextrin, and sugar, and potatoes contain 76 per cent. of starch and dextrin, and if all the starch and dextrin pass off in the urine as sugar, it is evident that to forbid potatoes and to allow instead an equal quantity of rice, is simply ordering the quantity of sugar from this source in the urine to be increased 14 per

cent., thus adding to the thirst and waste. Or if half-a-pint of port wine is forbidden containing from 128 to 272 grs. of sugar, and if a pint of porter or stout is ordered which contains from 368 to 960 grs. of sugar, it is clear that the quantity of sugar in the urine will thus be increased from half-an-ounce to an ounce-and-a-half daily.

Before passing to the best diabetic diet, there are two substances—bread and milk—which require to be further mentioned here.

Ordinary bread contains water, salts, starch, dextrin, sugar, and gluten.

If the salts, starch, dextrin, and sugar are washed away, the gluten remains, which, in a chemical point of view, is as unobjectionable as meat.

In making the different kinds of gluten bread this washing is more or less perfectly performed.

In the following analysis the water, starch, dextrin, and sugar were determined, the residue or difference was taken as gluten:

	Water.	Starch and Dextrin.	Sugar.	Gluten.
Ordidary bread, . .	36	49	1	23 per cent.
Aerated bread, . .	37	42	2	19 "
Gluten bread from Toulouse, . . .	2	16 to 44	0	82 to 54 "
Dried bread, . . .	2	60	1	37 "

The best washed gluten bread contains less starch than bran cakes or any brown bread; Dr. Pavey's almond bread is free from all starch, but the almond flour must be well washed to remove the sugar and dextrin, of which 10 per cent. are present.

Badly-washed gluten may be made into dry bread containing bulk for bulk more starch than ordinary undried bread; thus an excess of gluten bread may keep up the amount of sugar in the urine, and prevent an improvement in the symptoms.

With regard to milk, one hundred parts may be taken to contain three parts of lactine, or about half-an-ounce of lactine exists in a pint of milk. If all of this animal sugar was incapable of being consumed in the system, milk would be nearly as injurious as an equal quantity of many wines, and the best sweet ale; but experiment shows that this sugar is often partly or entirely consumed.

A diabetic patient lived upon butchers' meat alone for two

two days. The quantity of urine passed was forty ounces the first, and forty-two ounces the second day; specific gravity, 1029-0. No trace of sugar could be found. He then took milk for two days; the first day eighty-eight ounces, the second day ninety-nine ounces. The urine was forty-five and a-half ounces the first day; specific gravity, 1024-1: and the second day sixty-nine ounces; specific gravity, 1011-0. Sixty-seven grains only of sugar were passed the first day, and twenty-three the second day.

At a more advanced period of the disease, when strictly animal diet did not cause the sugar to disappear from the urine, milk alone was again taken.

The first day 138 ounces of milk were drank; the urine was 61 ounces; specific gravity, 1030-5. The second day 88 ounces of milk were taken; the urine was 34½ ounces; specific gravity, 1027-8. The quantity of sugar in the urine was 854 grains the first day, and 414 grains the second day. At this time, on animal diet alone, one day 280 grains of sugar were passed, and the next day 600 grains.

Thus milk is more or less injurious according to the stage of the complaint. When animal sugar can be consumed milk is comparatively harmless.

In the advanced stages of the complaint curds or sour milk, with the acid nearly neutralized by potass, soda, or ammonia, would be as unobjectionable as gluten bread.

There are two great ends to be gained by the use of medicines in diabetes.

Of these the first and most important is to promote the oxidation of the sugar; or, failing this, to compensate the system for the loss of saccharine fuel, and the consequent loss of power and nutrition by promoting the supply and oxidation of the oleaginous fuel.

Of all the medicines that can be given for the promotion of the oxidation, whether of sugar or fat, in the body, iron and alkalies are the most energetic; and hence, beyond all other remedies, iron or ammonio-citrate of iron with excess of ammonia, or with other alkalies, are the best medicines for diabetes. This iron may be given in potass or Vichy or in Fachingen water, and that preparation which confines the bowels least is most to be preferred. Hence the potassio-tartrate and Griffith's mixture are often used.

Alkalies without iron promote oxidation. This is very evident in the copper test for sugar. M. Miahle even has stated that alkalies are the specific for diabetes; without doubt they

are of importance in promoting oxidation. Soda or potass may be given in the caustic state or as carbonates. Carbonate of ammonia in ten, fifteen, or even twenty-grain doses thrice daily in any gaseous mineral lessens the thirst.

Long since Professor Graham tried the phosphate of soda, with three equivalents of soda, on the ground that the blood required this substance and could not get it in the animal food. I have not found any great advantage from its use.

Vichy water, more particularly the Celestin, is recommended by M. Bouchardat. It contains between eighty and ninety grains of carbonated alkali and alkaline earths in a quart of water. The Hospital spring contains about ninety-six grains, the Grand Gille ninety-two, the Hautrive eighty-nine, and the Celestin eighty-five grains to a quart of water.

Carlsbad Sprudel water and the more aperient Muhl spring is highly praised by Dr. J. Seegen. It contains about one-fourth or less of the alkali of Vichy water, but half a drachm or more of sulphate of soda in each quart gives an aperient action which the common salt of Vichy water rarely possesses. Marienbad Kreutzbrun water is twice as aperient, but rather less alkaline than Carlsbad Sprudel. Fachingen water has one-third or more of the alkaline power of Vichy. Seltzer water one-sixth.

Besides alkalies some animal substances are thought to promote change in the sugar in diabetes. Of these rennet and pepsine may be mentioned. In 1852 Dr. James Gray published some remarkable results in the 'Edinburgh Monthly Medical Journal,' p. 396, but I am not satisfied that rennet is very useful in diabetes. It is an albuminous substance in a state of change, and, therefore, it exactly fulfils the conditions required in the undiscovered specific for diabetes. It should be well washed with water to remove the adhering sugar and dextrin, and it should be given on an empty stomach, so as to enable it, if possible, to act on the sugar in the blood rather than on the sugar in the food.

Pepsine is another albuminous substance in a state of change. Its action in the stomach is to help the solution of the albuminous food, but when it passes into the blood it might be the animal diatase that carries on the change in the sugar. With this idea it has been given in diabetes, but with no satisfactory result; although many patients have said they were better whilst taking this remedy, yet I have never found the sugar diminish under its use. It usually helps the action of the *bowels.*

Lately oxygen gas has been tried by Dr. Richardson in diabetes. It would be splendidly simple if this were the specific for diabetes. This view implies that a deficiency of oxygen is the cause of diabetes, but the chemistry of the disease does not admit of this explanation. There must be a much more complex chemical error than a want of oxygen, and it is far more probable that no deficiency of oxygen exists, but that it does not act because the proper animal diastase is not present.

Vegetable and animal oils and fats constitute important remedies in diabetes. Of all these, cod-liver oil and cream are most frequently used. The following case may be taken as an instance of the amount of cod-liver oil that can be given:

A man, aged twenty-four years, was admitted into St. George's Hospital, having lost twe stone in weight during eight months. He passed seven quarts of urine daily. He remained under treatment for a month, during which time he was on animal diet and cod-liver oil. He began with half an ounce daily, and this was gradually increased up to eight ounces. The quantity of urine fell to two pints and a-half, specific gravity 1030, and he increased in weight from eight st. 8 lbs. to 9 st. 1 lb.

Cream may be given in any quantity until the tongue begins to be coated, then it soon disagrees, and the stomach refuses to take it, or rejects it when taken.

Fats, combined with alkalies, as soaps, are more ready to undergo oxidation than when the glycerine is unseparated. Pure glycerine is, however, often very useful as a substitute for sugar in tea and in other liquids.

To lessen the thirst and the craving for food opium is very useful. The alkaloids of opium biffusing out of the blood in contact with the nerves of the blood-vessels cause contraction of the capillaries; this affects secretions, so that the quantity of urine, saliva, bile, and intestinal secretions is greatly diminished. The drain of urine and the desire for food are thus checked, but the increased constipation and dryness of the mouth almost, and in some instances quite, counterbalance the gain obtained by checking the flow of water. By the use of very small quantities of opium, as five or ten grains of Dover's powder, or five or ten drops of laudanum once or twice daily, the thirst and excessive flow of urine may be stopped, and the constipation may not be excessively increased.

The second great object in the treatment of diabetes is to remove the constipation.

The excessive determination of water to the kidneys causes increased dryness elsewhere, hence the mucous membrane and the skin are harsh and dry; probably also the production of acid being greatly diminished by arrest of change in the sugar, the healthy secretion by the intestines and skin cannot take place.

Notwithstanding the amount of food eaten, the action of the bowels usually is very difficult. All saline aperients increase the thirst and pass off by the urine. Magnesia from the absence of acidity is usually inactive. Castor oil is by far the best aperient, when it does not nauseate, then capsules containing castor oil with minute quantities of croton oil are most efficacious. Compound extract of colocynth with jalapine, scammony, or gamboge, or podophilline will act when oil cannot be taken. Mercury when soluble combines with the albuminous matters with which it comes in contact and sets up increased chemical action. The nutrition of the parts to which it is directly applied, or carried by absorption and diffusion, is so altered that increased action, inflammation, and ulceration are produced. This altered nutrition has no influence on the oxidation of the sugar or fat, and hence diabates is not benefited by mercury. Calomel may be used as an aperient, but it has not any advantage over other chemical or mechanical irritants to the mucous membrane of the bowels, and promoting a more rapid change in the albuminous structures of the textures causes a feebler nutrition to take place.

In extreme cases the constipation of the bowels becomes the most serious symptom. The chemical disease leads to a mechanical difficulty amounting almost to an obstruction of the bowels. Strong chemical irritants are required to excite the muscular action, sometimes even "croton oil" is necessary. When the bowels do act the prostration of the strength is sometimes alarming: so little power seems to be set free in the body that any extra expenditure seems to deprive the heart of the force necessary to carry out the circulation, in the same way as a fatiguing journey to London for advice in extreme mental anxiety will bring a prostration of strength from which with difficulty recovery takes place.—*Med. Times and Gazette*, from *Braithwaith's Retrospect.*

EDITORIAL AND MISCELLANEOUS.

THE RUSH MEDICAL COLLEGE DISPENSARY.

This charity—established for the relief of those w ose lot embraces the multiplied misfortunes which follow in the train of indigence and disease—was, of kindred institutions, among the earliest founded in the city, and has been the means of lightening the burdens which have bowed down large numbers of poor, but many of them worthy people. Nor have its benefits been confined exclusively to these unfortunate classes, for indirectly they have reached the more highly favored and wealthy. The large number of prisoners of war confined at Camp Douglas, the troops necessarily stationed here for guard duty, and passing through in their transit to and from the front, made the small-pox for a time epidemic in the city, the municipal government in the meantime making no adequate provision to prevent the spread of the disease. Especially during this period the poor flocked to the Dispensary for vaccination, and undoubtedly many in this way escaped the loathsome and fatal disease, and thus the wealthy were protected by the prevention of the development of new centres of infection. The Dispensary is open every Monday, Wednesday and Saturday, in the College building. Dr. C. H. Duk has very kindly taken the principal charge of it during the past year, and has been untiring in his devotion to the interests of those who have presented themselves for treatment, as well as to the instruction of students in attendance. It is visited by several thousand patients annually, which brings together a greater variety of rare and interesting cases than any physician is likely to see in private practice.

During the summer months its clinics are attended by stu-

dents who are pursuing their studies in the city, while in the lecture season the most interesting cases are brought before the class. Prof. Brainard prescribes for and operates on the surgical cases, and among the operations thus witnessed by the class last winter were several of lithotomy, amputations, removal of tumors, operations for hare-lip, varicocele, reduction of dislocations, dressing of fractures, extirpation of superior and inferior maxillary bones, &c., &c.

DEMONSTRATOR OF RUSH MEDICAL COLLEGE.

Dr. Lynn has resigned his place as Demonstrator in this institution, carrying with him the esteem and kind wishes of the Faculty, with whom he has been associated in a very responsible position during the last three years. The place has been filled by the appointment of Dr. Edwin Powell, well known to the Alumni of the school from having occupied the same station a number of years with marked ability. On the breaking out of the war, he gave up his position for service in the army, where he made a record as an operator, and as chief Surgeon of one of our most important and best conducted hospitals, of which his Alma Mater may well be proud. Dr. Powell's numerous friends, both in civil and military life, will certainly congratulate the school that the place made vacant has been so worthily filled.

MARRIED—At Bedford, Lawrence Co., Ind., July 30th, by the Rev. Wm. F. Harned, Jos. H. WILSON, M. D., and JENNIE A. HARRIS, both of Marion, Linn Co., Iowa.

BOOK NOTICES AND REVIEWS.

A Treatise on Military Surgery and Hygiene. By Frank Hastings Hamilton, M. D., late Lieutenant-Colonel, Medical Inspector U. S. A.; Professor of Military Surgery and Hygiene, and of Fractures and Dislocations, in Bellevue Medical College, Surgeon to Bellevue Hospital, Author of a Treatise on "Fractures and Dislocations," and of a "Practical Treatise on Military Surgery." Illustrated with 127 Engravings. New York: Bailliere Brothers, 520 Broadway. 1865.

A suitable notice of this work has been too long delayed, and we now introduce it to the readers of the JOURNAL, without attempting a complete analysis, feeling assured that all who are in any way interested in this important branch of Surgery, will early purchase and peruse the work for themselves.

It is a new and original work by one of the leading Surgeons of the country, and it is enriched by the experience of four years in the camp and field of actual war. The opportunity thus offered to observe the progress and improvements in the art of Military Surgery has not been limited nor unimproved by the author, which give to the teachings of the work a value and authority which no merely theoretical dissertation could possibly impart.

The magnitude of the conflict through which we have just passed, is conceded to have been unequaled in any former time, and nothing was more likely than that such a contest would develop the inventive genius of the nation to the utmost in improving and perfecting the weapons of the belligerents, and accordingly we find that the art of war has reached a point of perfection unapproached hitherto. Great as have been the demonstrations of genius on the part of the combatants, however, improvement has by no means been limited to them, for the effectiveness of the army, in its most brilliant

campaigns, is undeniably in a great measure due to the skill and judgment of the Surgical corps in enforcing a more general observance of the laws of hygiene, and in that conservative Surgery which seeks to preserve the *limbs* as well as the lives of our soldiers.

We subjoin the table of contents, which, with the known ability of the author, will lead to a just appreciation of the value of the work:—Introduction—Examination of Recruits—General Hygiene of Troops—Bivouac, Accommodation of Troops in Tents, Barracks, Billets, Huts, etc.—Hospitals—Preparations for the Field—Hygienic Management of Troops upon the March—Conveyance of Sick and Wounded Soldiers—Gunshot Wounds—Gunshot Injuries of the Head—Gunshot Injuries of the Face and Neck—Gunshot Wounds of the Thorax—Punctured and Incised Wounds of the Thorax—Gunshot Wounds of the Abdomen—Punctured and Incised Wounds of the Abdomen—Gunshot Wounds of the Male Organs of Generation—Gunshot Fractures—Amputations—Exsections—Arrow Wounds—Traumatic Gangrene—Hospital Gangrene—Dry Gangrene—Tetanus—Scorbutus—On the Employment of Anæsthetics in Major Amputations and in other Severe Surgical Operations, after Gunshot Injuries—Appendix.

A System of Surgery; Pathological, Diagnostic, Therapeutic, and Operative. By Samuel D. Gross, M. D. Illustrated by over thirteen hundred Engravings. Third edition, much enlarged and revised. In two volumes. Published by Blanchard and Lea, Philadelphia.

The first two editions of Prof. Gross's System of Surgery are so familiar to the profession, and so highly prized, that it would be idle for us to speak in praise of this work. It is bound in calf, and the two volumes contain above two thousand pages. We cannot give an idea of the changes introduced into the last edition more briefly than to quote from the author's preface: "Upon the edition now issued upwards of two years and a half of arduous labor have been expended.

Every chapter has been thoroughly revised; the text has been augmented by an amount of matter nearly equal to two hundred pages; and a considerable number of wood-cuts, nearly all prepared for the purpose, have been introduced. Many portions have been entirely re-written, and every effort has been made to condense the language; while an enlargement in the form of the work has prevented an increase in the number of pages. The general arrangement is the same as in the previous imprints; and the additions, for the most part, widely scattered through the text, are essentially of a practical character."

The Essentials of Materia Medica and Therapeutics. By Alfred Baring Garrod, M. D., F.R.S., Fellow of the Royal College of Physicians, Professor of Materia Medica and Therapeutics at King's College, London; Physician to King's College Hospital, and Examiner in Materia Medica in the University of London. Published by William Wood & Co., 61 Walker street, N. Y. 1865.

This volume of 400 pages treats only of Materia Medica, it being the purpose and hope of the author "in a few months, to bring before the profession a separate volume devoted exclusively to the value of medicines in the treatment of disease, and embracing the whole subject of Therapeutics." The work is prepared with much ability, the natural history of medicines, their chemical relations, most common adulterations and doses, are given methodically, clearly and concisely, while even their best established therapeutic uses are not omitted, though condensed in a brief space. It is a very valuable addition to our medical literature, and we shall look with interest for the publication of its "companion work" on Therapeutics. Each book is to be complete in itself. The price of the present volume is $4.

We take pleasure in calling the attention of our readers to the "Price List" of S. C. Griggs & Co., contained in this number. This enterprising house promptly add to their large stock all recent medical publications.

GLAUCOMA: ITS SYMPTOMS, DIAGNOSIS AND TREATMENT, by PETER DIRCK KEYSER, M. D.; *Philadelphia, Lindsay & Blakiston*, 1864. *For Sale at Griggs & Co., Lake st., Chicago.*

Our readers who have not studied the subject of Glaucoma, as discussed in the original papers of Graefe, and other eminent observers, will find much profit in the careful perusal of this monograph. We do not recommend the work on the ground that Glaucoma is a common disease, and the subject therefore of great practical importance to the general physician. At the West the disease is undoubtedly very rare, on account perhaps of the small proportion in our population of aged persons, who are specially liable to it.

The use of the ophthalmoscope and Graefe's and Hancock's brilliant discoveries of iridectomy and section of the ciliary muscle, as curative operations for the disease, have stimulated investigation and extended our knowledge of this subject.

As an exposition of many well established facts regarding certain diseases of the intraocular tissues, we would commend the monograph of Dr. Keyser. It is stated in the preface that the work is founded on the facts observed in the clinics of Graefe at Berlin. We believe the *Boston Medical and Surgical Journal* was the first to call attention of the profession to the fact that the pamphlet is a literal reprint of the lectures of J. S. Wells, on Glaucoma, published last year in London.

The work is yet worthy of perusal, although we think very much more could be said in favor of Hancock's operation of Paracentesis oculi with division of the ciliary muscle, than appears in the work before us.

The typography is worthy of notice. The peculiar tint of the paper will undoubtedly be found agreeable to the eye of the reader. Probably all books, if made of yellow-tinted paper would be read with less fatigue by the majority of persons than as now printed upon perfectly white paper.

H...s

CHICAGO

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ORIGINAL COMMUNICATIONS.

EMPYEMA.

By JAS. S. WHITMIRE, M. D. of Metamora, Illinois.]

In the course of four years, it has been my fortune to have under my care four cases of Empyema, all of which have perfectly recovered, and the persons are now enjoying as good health as was ever allotted to either, previous to having the disease.

Therefore, without going into any general treatise on the disease, the theory of which is fully ventillated in our standard works, I propose, for the timid country practitioner, to give a brief history of three of the cases and their treatment. This, I do under the firm conviction that very many go down to an untimely grave from either ignorance or timidity, under the misnomer of Phthisis, Chronic Hepatitis, Hydrothorax, Cardiac disease, &c., &c. Now if this class of good men could be aroused to a just sense of their duty, and the dread of an operation be lessened in their minds, very many valuable lives might be annually saved; the profession elevated, and physicians respected in country practice, according to their real merit.

The first case to which my attention was called was in the family of David Watson, a few miles from this place. I was attending Mrs. Watson in case of acute rheumatism, March 1st, 1860, at the time, and she was not getting along just as well as I could have desired, so that the family had become quite impatient. During this period of impatience, her son Edwin had an attack of what the doctor (an eclectic) called, an Intermittent Billious Fever. The young man was 21 years of age, and, on account of the slow recovery of his mother, exercised his undoubted prerogative of employing whomsoever he pleased, and consequently sent for another physician to attend him. I supposed at the time that the Dr. made his diagnosis, as he did, from the boy having had a chill, no attention having been paid to the physical signs. When I arrived the next day on my usual visit, I discovered another patient in the opposite corner of the same room. On inquiry, I found that another physician had been sent for. I asked, what the Dr. had called the disease: How the boy was attacked; how he had been since held, and many other questions partly from curiosity, and partly that I might observe more closely the progress of the disease. I was asked by his father to examine him and give my opinion for his own satisfaction, which I did. I found that he had been attacked with Pleuro-pneumonia of the middle lobe of the right lung, and so stated the fact, and in connection the danger his son was in, and that, if he did not wish to employ me, he had better send for another physician. He did not, however, heed the advice, and therefore, the eclectic and I each attended our own patient. I, however, kept a steady watch over the eclectic's patient as well as my own; the Dr. assuring the family from day to day that Edwin was better which I never contradicted in the least, but with my closest scrutiny "*I could not see it.*" In the course of two weeks I discharged my patient as convalescent, and left my eclectic friend "*alone in his glory*"—and in my opinion, exceedingly well pleased at getting rid of my presence. Still harping on the speedy recovery of his charge.

Edwin was taken sick about the first of March, 1860, and after the middle of that month I did not see him, till near the middle of April. I found him then, the next day after an operation had been performed by Dr. Wilson of Washington. The Dr. on his return, called upon me, by consent of the family, to take charge of the patient as the distance was too great for him to pay that attention to the case, as necessity required. He informed me at the same time that he had drawn off seven pints of puss. The operation of paracentesis had been performed between the 5th and 6th ribs and back of the nipple. Very much emaciated, Hectic fever, Colliquiative sweats, and a persistent diarrhœa. I found it difficult to draw the puss from the opening made, I therefore took a common female silver catheter to a silver-smith, had the end cut off, flattened for two inches and the end closed and rounded nicely and an opening made on one of the flat sides, the diameter of which was equal to that of the instrument. This I could slide in between the ribs very easily, producing but little pain and the pus would pass freely through it so that I had little difficulty in emptying the chest, I put him on Mur. Tinct. of Iron, Alum and Quinine, and ordered him rich animal broths, and if he wished it broiled beef or any kind of game.

Notwithstanding this I found the secretion of pus rather on the increase than otherwise and secreted in large quantities, so that my patient was fast succombing to this enormous drain upon the system. I kept a tent in the orifice, and drew off the pus every day that I might take note of the amount. Many days I would take a pint, others not more than half pint, always rinsing out the cavity with warm water by means of a gum cather which I would introduce to the botton of the cavity and inject through the open end with a small pointed glass syringe. Finding that some measure must be adopted to put a stop to this discharge, I determined to use a solution of Iodine after each rinsing with warm water. This I made of the following strength: ℞ Pot. Iod. gr. x, Tinct. Iod. ʒ ij, Aqua ʒ iv. This I would again draw off and introduce the

tent. In the course of a week I found that the puss was materially diminished. I then added one more drachm of the tincture to the solution, and kept up the process for another week, at the end of which, seeing no evil consequences arise from its use, but rather, a slow, but steady improvement; I determined to only use the solution of Iodine every other day, and then only two ounces which I left remaining in the cavity; every day however I kept up the evacuating and rinsing processes. At the end of a few weeks the progress of the cure began to be very manifest in the lessening of the size of the cavity, either from adhesions or the resumption of the lungs of their normal functions by the permeability of the heretofore closed air cells, or perhaps both. I now lessened the strength of the solution and also its quantity using only one ounce and lengthened the number of days between its use. His appetite continued to improve; his strength and flesh increased, and when I could introduce but half an ounce of liquid into the cavity I closed the orifice; the wound healed kindly, and on the 15th day of August, 1860, I discharged my patient as cured and had the satisfaction of seeing him walking the streets in a short time without the assistance of a cane. The cavity, I have no doubt, closed by granulation of the two pleural surfaces and the chest is very little contracted, but the ribs do not move so freely in respiration as on the left side. At this time, four years since his recovery, there is little or no difference in the resonance on percussion of the two sides, and the respiratory murmur seems entirely healthy; and for the last three years he has worked steadily on a farm.

Case 2—Was a soldier belonging to one of the Indiana regiments. I do not recollect his name—I found him in one of the wards of the post hospital, at Smithland Ky., on the 2d of March, when I was put in charge. He told me that he had been taken two months previously and that he was at once sent to hospital. I found by reference to the hospital *reg*ister that his disease had been diagnosed Pleuro-Pneumo-

nia of right side. On measurement found that side two inches larger than the left; little or no movement of the ribs of that side during respiration, which was much hurried. Distinct bronchial, but no distinguishable vessicular respiration; flatness on percuesion two inches above the nipple from spine to sternum and down to the base of the lung; frequent, small, soft pulse; hectic fever; colliquitive sweats; persistent diarrhœa and œdema of the feet and legs. On the 5th I opened the chest with a common bistory between the 5th and 6th ribs below and behind the nipple, and drew off two pints or more of thin purulent matter of a greenish yellow color. As in the former case I washed the cavity with warm water, but this time I lost no time in injecting the cavity with a solution of Iodine, in a similar manner as in Case 1. Every day for several days I evacuated the cavity by simply removing the tent and received from one to two gills of purulent matter each time. Finding the secretion of pus was not diminishing as fast as I thought it ought, on every alternate day I used instead of the solution of Iodine, a solution of Sulph. Zinc gr. v to the ounce of water to rinse out the cavity, and on the intermediate day I used the solution of Iodine leaving two ounces in the cavity. By the last of March very little pus escaped and the cavity was nearly closed; and as soon as I could hear tolerably distinctly the respiratory murmur, I closed the orifice which in a few days healed kindly, and my patient was able to sit up. At this time my hospital was broken up, and my patient removed to Paducah, Ky., where I lost sight of him till during the siege of Vicksburg, over fifteen months, where he found my regiment, and looked me up. He looked stout and rugged and told me that he had been on during the last six months, and had participated in all the battles previous to our investment and during the siege of that place. This man's constitutional and general treatment was substantially the same, as case 1. His recovery was more speedy and his health equally as good. One reason, probably, of his more speedy recovery was, that the compres-

sion of his lung was not so great and the Pneumonia had probably, a more effectual treatment.

Case 3.—Geo. W. Fawser, aged 13 years, was attacked February 15th, 1864 with Pleuro-pneumonia. On the 18th as I was passing the house, his father called me in; I represented to the parents the facts in the case, and made the usual prescription in such cases, and told them that the boy should have regular medical attendance, and that if he did not get it the consequences might be serious. The parents however thought otherwise and paid me for the call, telling me at the same time that if the boy did not soon begin to recover, they would send for me. On the 26th I was passing, and again called in and found that there was already effusion of water or pus in the left pleural cavity there being dullness on percussion and bronchial respiration, with absence of the respiratory murmer. I directed Hydrarg. Sub. Mur. and Pulv. Scilla, every four hours and after six powders had been taken senna and salts to produce free purgation. After this a large blister was to be applied all over the left chest. They again paid me for my call and said they would let me know from time to time how he was doing.

March 1st, the father called on me for a prescription and said his son was very much improved and that if he now had something to brace him up, he thought his son would soon recover. I thought very differently however, and so informed him of my doubts in the case. During the months of March and April I was called on, at my office, to prescribe several times for the boy, the father reporting him from time to time slowly improving. On the 7th of May I was called to see him. I found the child bolstered up in a chair looking almost bloodless, much emaciated, continued diarrhœa, night sweats, hectic fever, with respiration as hurried as a church mouse, on a hot day, and unable to walk across the floor. I stripped him, and it required no measurement, or other examination to diagnose the difficulty, the left breast being very much larger *than the right*; the heart was beating on the right side so that

the right lung was also suffering from the enormous quantity of fluid accumulated in the left. I had no doubt from all the circumstances, that it was pus, and that the boy's days were very few without immediate relief, and so informed the parents. I explained to them what I must do, with their consent, to which they reluctantly agreed. On the 8th day of May I introduced an exploring trocar and canula between the fifth and sixth ribs, directly below the nipple, to ascertain whether I would certainly get pus or serum, that I could tell with a certainty about the proper size of the orifice that I must make for the evacuation of the contents of the chest. While the canula was still in, I passed a common bistory immediately under the instrument into the cavity and drew off at once through my flattened silver canula, that I used in the first place, three and a half pints of thin virulent matter having a greenish tinge. I then introduced a small gum catheter and rinsed the cavity with warm water, after which I at once injected it with the solution of Iodine, drew it off and introduced a tent which I fastened down by means of adhesive strips to prevent the introduction of air into the cavity. On the 9th I removed the tent and drew off half a pint of pus, and repeated the rinsing and injection of Iodine in the cavity as the day before, and so continued the same process for near one week. At the end of this time finding that the quantity of pus was not materially diminishing from day to day, as I could have desired, I determined to use the solution of Sulph Zinc., as in case two, on every alternate day; and on the days that I used the solution of Iodine, after rinsing with warm water, I simply introduced two or three ounces of the solution through a gum catheter and let it remain in the cavity. This I followed up for a couple of weeks, the discharge diminishing slowly and steadily. In the mean time I had taught the father to attend to the operation himself, so that I only visited him once per week leaving directions for the cavity to be evacuated every day, and washed out as usual, and the solution of Iodine to be used once in three or four

days. The capacity of the cavity began to be lessened, and grew smaller and smaller till the 1st day of Aug. 1864. I closed the orifice and it speedily healed. I gave him, from the commencement, Opium Quinine, and Mur. Tinct. of Iron, and compelled him to take animal broths as a common drink. Three times a day he was allowed a roast potato, or a baked apple, and sometimes a little bread. Under this treatment the boy rapidly gained his strength. His chest is very little deformed, and now at this time he is hale and hearty and works steadily on the farm, making no complaint of any uneasiness about the chest.

Case 4—Would simply be a rehash of what I have before said in the preceding cases, and there being nothing particular in the case, it would be useless to report it in this place.

The only noticeable differences in the treatment of the foregoing cases, from that usually pursued when an operation has to be resorted to, is the more frequent evacuation of the cavity of its contents, giving the lung a better chance to recover from the pressure in the air cells that the quantity of pus must necessarily produce, preventing a free admission of air as well as blood, thereby interfering with the nutrition of the lung as well as the oxydation of the blood. From what I have observed in these cases, it is also my opinion that the admission of air into the pleural cavity is not attended with such evil consequences as we have heretofore been led to believe; the contact of the air with the puss being the principal evil, rendering putrifaction more speedy.

From my little experience in these cases I would not at all hesitate to introduce this solution of Iodine into the pleural cavity in case of Hydrothorax, and would expect by so doing, to change the condition of the secreting surface so as not only to lessen the amount of fluid secreted, but also to increase the power of absorption, thus balancing the two functions by restoring their equilibrium, and consequently establishing a healthy action.

CLINICAL LECTURES ON DISEASES OF THE EYE.

By E. L. HOLMES, M. D., of Chicago,
Lecturer on Diseases of the Eye and Ear in Rush Medical College, and Surgeon of the Chicago Charitable Eye and Ear Infirmary.

THE CRYSTALLINE LENS.

GENTLEMEN:

The crystalline lens is double convex in form, more convex posteriorly than anteriorly, of perfect transparency and great elasticity. It is about four lines in diameter, and varies in different individuals from one and a half to two and a quarter lines in thickness at its antero-posteri or axis.

The lens is situated behind the iris, its axis nearly coinciding with a line drawn through the centre of the cornea and of the globe itself. The pupillary edge of the iris rests in contact with its anterior convex surface; but the periphery of the iris is slightly separated from the lens. The space thus formed is termed by some authors the posterior chamber Other writers apply the term posterior chamber to the portion of the eye, posterior to the lens; the anterior chamber being the space occupied by the aqueous humor.

The posterior surface of the lens is embeded in a cup-shaped depression in the vitreous humor, and adheres slightly to the delicate hyaloid membrane, which surrounds this humor and which is firmly united with the Zonula of Zinn near the anterior border of the retina. As different authorities vary somewhat in their description of the zonula, and as the description in my last lecture may appear somewhat obscure, I will recall your attention to the subject.

At the ora serrata the retina loses its nervous structure and passes forward to the ciliary processes as a delicate almost structureless membrane. The hyaloid is so intimately united with this membrane, that it is difficult with the highest power of the microscope to trace each layer separately.

This membrane subdivides into two layers,—the true zonula passing on to the anterior part of the capsule of the lens—and the posterior layer continuing forward as the hyaloid, to be attached to the posterior part of the capsule of the lens. The triangular space between these two lamina and the periphory of the lens is called the canal of Petit.

The lens, although held quite firmly in position by these attachments, may suffer considerable displacement forwards without injury. With certain incised or punctured wounds of the cornea, the aqueous humor may be discharged, and the iris and lens pressed forward in contact with the cornea. As the interior chamber becomes refilled they often recede to their normal position uninjured.

The relative position of the cornea, iris and lens is worthy of especial consideration. You will recollect that the cornea is about six lines in diameter, the iris somewhat more, its periphery extending slightly beyond that of the cornea, and that the diameter of the lens is about four lines. It will thus appear evident to you how an instrument, a cataract knife for instance, can be introduced into the eye a little posterior to the union of the cornea and sclerotic in such a way as to open the anterior chamber at its periphery, evacuate the aqueous humor and divide the ciliary processes, without injury to the lens. This is done in Hancock's operation to which I have already called your attention.

The lens is composed of two distinct portions, the capsule and its enclosed lenticular substance. The capsule is a perfectly transparent membrane, almost without a trace of cell structure. The anterior half is quite firm, offering a perceptible resistance when pressed by the point of an instrument. The posterior half is less firm. The lenticular portion is composed of a hard kernel surrounded by a soft cortical substance. The general structure of the lens may be best studied by first boiling it a few minutes in water. It will then be found that it is quite complex in structure, consisting of a large number of concentric layers which are composed of minute

fibres. These fibres are six-sided, and arranged as represented in the plates before you. The arrangement of these layers and fibres is the same in the soft cortical substance and in the hard central kernel. The lens of fish and the lower animals after boiling may be studied with advantage, when one from the human eye is not at hand.

No nerves or vessels have been discovered in any portion of the lens. Nutrition is maintained by direct transfusion from the surrounding tissues, especially the iris and the choroid. Serious and persistent diseases of either of these organs are very liable to result in disturbed nutrition of the lens with more or less opacity. Molecular change apparently occurs with considerable rapidity, since slight punctures of the capsule may heal in a very short time, with scarcely a trace of opacity. Exudations from the iris in inflammation become very speedily united with the anterior capsule; the lens may also form adhesions with the cornea, in case of perforating ulcers of the latter, the aqueous humor being evacuated and the lens brought in contact with the latter. Slight wounds of the capsule may heal either with or without a visible cicatrix; penetrating injuries of the lens however are generally followed by opacity, softening and often with final absorption of the lenticular portions, the capsule being left as a delicate membrane floating behind the pupil. Concussions of the globe either from blows upon the eye or the head often produce opacity of the lens.

Attempts have been made to show that the lens after its destruction may be reproduced, but there are probably no observations sufficiently well authenticated to establish the fact.

In childhood the thickness of the lens at the axis is greater in proportion to the diameter than in advanced age. In childhood also the lens is much softer and elastic than subsequently. In infancy and old age the anterior convex surface is much nearer the cornea, making the anterior chamber much smaller than during other periods of life.

In advanced age the lens even when transparent acquires a yellowish cloudy appearance, which may be mistaken for cataract. Changes in the color of the choroid in the aged renders this cloudy appearance more perceptible. There is another peculiarity in the lens of many aged persons, which, like the rinkles in the face or the loss of pigment in the hair, can scarcely be considered as disease. An examination of a large number of aged individuals with the opthalmoscope will reveal in a certain proportion the presence of short dark lines arranged around the perpiphery of the lens. Since these lines are so often known to exist many years with scarcely any imperfection of vision, some pathologists have regarded them as one of the changes of old age and not necessarily as evidence of incipient cataract. This change in the appearance of the lens is analagous to the arcus senilis of the cornea. It in fact has been called the "arcus senilis of the lens."

The crystalline lens performs two important functions. With the cornea, aqueous and vitrious humors, it causes the rays of light from objects to converge and form an image within the eye.

It is also the instrument by means of which the eye is so readily adjusted to distinct vision at different distances.

PATHOLOGIA GENERALLIS.

By W. H. PRICE.

Medicine may be compared to a great edifice, the foundation and chief entrances of which represent general pathology, which generally give the proper approach to the separate rooms, special diseases. Compare the state of the practice of medicine with that of anatomy, physiology and chemistry—the great fundamental or preparatory studies. How minute,

how precise, how connected and definite are these, yet how loose—indefinite, uncertain, unconnected is the practice of medicine when not based upon its foundation, general pathology. To the public it appears altogether vague without any acknowled principles. Is there any wonder then that quackery should triumph, that the public show their want of faith in legitimate medicine by their ready belief in any novelty that is not legitimate. Thus one year St. John Long plan, another homœopathy, another Morrison's pills, another the water cure, rules the fashion. The public may show their ignorance by such credulity, but they show also the want of something plain and trustworthy in regular practice. The public will not believe that the secret of the art is with a faculty which professes to follow experience only. The quack also can appeal to his experience, and that too in a way more striking and convincing than those who express doubts and admit difficulties. Thus one who cures nervous diseases can calculate his success by the numerical method. In 8,000 cases he can count only 20 failures. Another will tell of an extraordinary percentage of success in cases of deafness, in which the most eminent practitioners had failed. Hence the partisans of quackery are more zealous in the defence of their favorite notions, than others are in support of the regular art. No wonder that homœopathy and the water cure have their royal and noble advocates. Then there is a captivating simplicity in the theories of quacks. A certain high official personage pins his faith to an empiric who was a gardener, and whose notion is, that all diseases proceed from buttercups. This is the theory, every man, woman and child eats mutton, beef, or butter, or drinks milk; every cow and sheep eats buttercups with its grass; buttercups are rank and acrid weeds; all diseases proceed from buttercups. How beautifully simple! How attractive, too, are the comprehensive views of the hygeist and the water curers! They both agree in their pathology; all diseases arise from bad matter in the blood; they only differ in their mode of expelling it from the

system. One purges out the peccant humor, the other washes and sweats it forth.

On the other hand the regular practitioner has nothing so plausible or so captivating to bring forward in explanation of his method, unless he has made general pathology the basis of his practice. He either has no theory at all and grounds his practice on experience, or if he gives a theory it is viewed only as an opinion, no better than the hypothesis of the quack in an art so little founded on principles as medicine, would be, without general pathology. General pathology is the basis of practical medicine, without it, it is impossible for the young practitioner to practice his art with any degree of success. To undertake the practice of medicine without a knowledge of general pathology, is like a person beginning the study of mechanics with the steam engine, or to the student of chemistry commencing with organic matter. The general result is, that where any distinct notion of disease is acquired, it is one not at all founded on previous physiological knowledge; but it is a new idea of disease as an absolute separate thing, not a mere condition consisting of altered function and structure, but a being, the character and history of which are to be detailed like that of a plant or an animal.

If now the student, who has not previously acquired any general ideas of pathology, but simply studied the dry mass of disease in detail, is followed to the bedside, well crammed with his nosological list and definitions, it will be seen how his knowledge, so meritoriously and laboriously obtained, will serve him in the hour of need. In a few cases of fully developed and well marked acute diseases, such as pleurisy, scarlet fever, or rheumatism, he may get on very well, but in the commoner description of cases, acute or chronic, in their early stages, in their endless variations, from peculiarities of constitution, or from complicating causes, he finds himself continually at a loss, the phenomena do not correspond with any of his defined diseases, they frequently change their character in a way that he cannot account for; his prognosis

falsified, his diagnosis fails, and his treatment, although not always unsuccessful, does not answer according to his expectations—some patients recovering whom he expected to die, others dying or not improving whom he expected to recover. Disappointed in the failure of his nosological learning, the young practitioner more and more mistrusts it, and falls into a routine of empirical practice. Without troubling his head about the name or nature of diseases, he thinks solely of their treatment, and begrudging the time that he has spent with books and lectures, he decries everything that is not practical. Still he is obliged to retain some notions of the theory of disease; but they are general notions, and not fettered by definitions. He still studies symptoms, he seeks in the pulse and heat of skin indications of fever and inflammation; he looks to the tongue and alvine evacuations, for proofs of disorder of the digestive system; he judges by the complexion and muscular strength the state of the constitution. In short, he has in practice learned himself, in a loose way, at the expense of previous studies, and sometimes, it is to be feared, at the expense of some bad practice, what he ought to have previously studied as the foundation of his practice. This we are led to the conclusive presumption that general pathology is the proper basis for practical medicine, and I venture to affirm that the chief reason why the practice of medicine has been commonly so distasteful and so unsatisfactory when tested at the bedside, is because its foundation has not been efficiently studied.

I think that a knowledge of general pathology is a more efficient help at the bedside than such knowledge of diseases, as is to be obtained only from nosological definitions and details. Without the connecting link of general pathology, practical medicine derives little or no aid from anatomy and physiology. Instead of being founded upon them, it is studied and practised quite independent of a full knowledge of them, and is generally acquired in proportion as they are forgotten. This kind of practical medicine is much the same as

that of old women and nurses, it consists chiefly of treating symptoms by remedies that have been found useful in similar cases, without the trouble of inquiring about the causes of the symptoms or the precise seat of the disease. Thus, if a person complains of headache and giddiness, leeches are applied, purgatives are given, because they have been found useful in similar cases. An intimate knowledge of the structure and functions of the contents of the head would give no farther help in the use of these remedies, nor suggest others, if these be found to fail. If they do fail, the only resource is in experiment: first one thing is tried, then another, until much mischief may be done, or at last, perchance, the right remedy may be hit upon, and this may be the very opposite of those first used. Long experience may make the symptom treating practitioner more successful, if he be an observing man, because it will acquaint him with additional symptoms to be considered for the guidance of the treatment. But there are few of this class of practitioners who are careful, observing men, and that profit by their experience. But the benefit of such experience is gained at the commencement by the student of general pathology. He has learned to trace symptoms to their causes. Having been taught by anatomy the peculiarities of the circulation in the head, and by physiology confirmed by clinical observation, that this circulation may be similarly impeded by opposite causes, inanition as well as fulness, he is prepared to find out through other symptoms which is the cause of the headache in the case before him, and he adapts his remedies accordingly. In fact, a true pathology and sound principles of medicine are the embodiment of the results of experience in disease, with a knowledge of structure and function in health.

General pathology is the only connecting link between the preparatory sciences and practical medicine. It needs only the growth and continued support of its chief members, especially anatomy, physiology and clinical observation, to become the perfect and efficient director of practical medicine.

The great proof of the practical utility of general pathology, is the aid which it gives in the study of clinical medicine, and the light which clinical medicine throws on it continually. The states which the practitioner has to treat are often too indefinite or too mixed to correspond with any of the definitions of special disease. They frequently consist of functional disorder, varying with time and circumstances, or changing its place so as to present no fixed characters. But compared by the pathologist with the standard of health and analyzed from their complexity, their nature becomes intelligible, and their proper treatment obvious so far as means are possessed to counteract or control that which is wrong. See in the disordered state of health, which some call disordered constitution, others indigestion, how the pathologist analyzes the symptoms of such a state, in the white or yellowish furred tongue, morbid crustations, tender epigastrium, sometimes full right hypochondrium, with extended dulness on percussion, the discolored fæces, the high colored and turbid urine. In these he finds proof of congestion and disturbed secretion of the liver and upper part of the alimentary canal. He recognizes in the remedies employed, means, which by increasing the secretions, relieve the congestion, and if these fail he can suggest other measures which he knows to be efficient in removing congestion and restoring the natural secretions. Again great confusion in diagnosis as well as in practice, has arisen from comprehending under the specific name of hysteria the most opposite and the most varying conditions, merely because they are consorted with some nervous phenomena, so that this word becomes almost synonymous with female diseases. But pathologically considered, the confusion in diagnosis, and in some measure the perplexity in regard to treatment, cease. In one case the pathologist finds the uterine function impaired, but this only in common with other functions. In this condition of the system he finds a want of blood throughout the body, which want is denoted by the waxy complexion, the pallid lips and gums, the loose yet

easily quickened pulse, the panting breath, the feeble limbs, &c. Here the restoration of the blood is the obvious indication, and in proportion as this is effected, the symptoms of nervousness, debility and loss of function disappear. In another case called hysteria, the pathologist discovers the opposite condition, that of sanguineous plethora, which, independently of any disorder of the uterus, causes trouble in different parts of the economy, but especially in the nervous system, which in most females is peculiarly liable to disorder. Here, too, he is led to the most appropriate treatment. This is but one instance out of many that might be adduced to show the great practical utility of general pathology. In fact the leading rules, those which guide the most experienced men, are founded on general views of diseased function and structure. Practical men do not treat a disease merely according to its name or according to the nature of the local mischief. Inflammation is not always to be combated by venesection nor hemorrhage by styptics. The condition of the system, that is, of the functions, is to be duly considered, and the variations of this condition, the states of sthenia and and asthenia, tone and debility, excitement and depression, plethora and anæmia.

It is a fact, that practitioners do act more on general ideas of disease than on their knowledge of particular diseases. They feel the pulse and the skin to guide them in the use of venesection, whether they have found out the special disease or not. They examine the tongue and inquire as to the state of the evacuations to guide them in the use of purgatives, under whatever complaint the patient labors. They consider the complexion and bodily strength in connection with dietetic measures, and the chief treatment of convalescence depends on rules suggested by general pathological knowledge. It is then very important that these general views, which are so practical and so extensive in their application, should be well studied, and that the leading doctrines of disease should not be left to be picked up from casual retrospects of experi-

ence, but they should be learned as the very ground-work of practical knowledge. What, then, in this general pathology which is so much extoled by the profession as the proper foundation of practical medicine? It is not a collection of hypotheses hung on solitary facts, and ingeniously devised to explain this or that symptom, or the *modus-operandi* of this or that remedy. It is not anything floating on conjectural notions in anatomy and physiology, such as the existence and circulation of a nervous fluid, or the vital attractions and repulsions of the circulating fluids, notions which, however they may hereafter be substantiated, are at present too speculative to form a foundation for pathology. Nor is it a partial set of opinions erected on one only of the many pediments of fact on which the science of medicine should stand. Healthy anatomy, physiology, physics, chemistry, the study of clinical medicine, that of materia medica, morbid anatomy—neither of these alone can furnish a basis for pathology—that basis must be formed by ALL the facts which all supply, constitute the material of which it is built, and the general facts or laws of all must be brought to bear on the arrangement of these materials in the construction of a system of pathology. In fact general pathology is like the trunk and great branches of a tree, of which special pathology constitutes the leaves and boughs—all preserving an identity and connection, yet each portion having peculiarities of character which require seperate study.

CEREBRO-SPINAL MENINGITIS, OR SPOTTED FEVER.—TREATED BY BLISTERING AND BELLADONNA.

By E. R. TRAVERS, M. D., Amboy, Ills.

May 9th, 1865, I was sent for to see a patient, Miss Jannett Munger, aged eighteen years, residing at Mr. John Fagan's house, in Bureau county. I found her suffering from chronic

spasmodic muscular contractions, with most distressing opisthotonos, and partial paralysis of the limbs, and a little delirious, with several spots of a well marked florid color, with a quick but fluttering pulse, and moist white coating over the tongue, and considerable palpitation of the heart. After making some inquiries, I found that the day previous she had a well marked chill, with a feeling of general indisposition, which was followed by a high fever and soreness of the throat. Her bowels being constipated I ordered a mild laxative, and applied a blister over the back of the neck, and then had the blistered surface smeared with Ung. Belladonna. I also gave her the following mixture: Tr. Belladonna, Tr. Viratrum Viride, Tr. Digitalis, aa. m. iii. every hour, until she was easier, then I continued the same every three hours, and stopped the Belladonna as soon as I perceived its constitutional effects make their appearance. My patient improved under this treatment every day. Her spasms became less frequent, and of shorter duration. In seven days I pronounced her convalescent, and ordered her a preparation of Iron and Quinine, to take a couple of weeks. She is now quite well and entirely recovered. I would be pleased to learn if this remedy had ever been recommended for this disease before, or if any of your readers have tried it. I was led to adopt it from general principles, and I am persuaded to the opinion that in this case it proved a great desideratum.

SELECTED.

HISTORY, THEORY AND PRACTICE OF SYPHILISATION.

By PROF. W. BOECK, of Christiania.

Delivered in the Theatre of the Meath Hospital and County of Dublin Infirmary, on Friday, June 2, 1865.

GENTLEMEN:

I have been requested to deliver a lecture on syphilisation: I willingly comply with the request, as Dr. Moore has had the goodness to translate my lecture, but I must apologize for my imperfect pronunciation of your language.

By syphilisation I understand the mode of treatment by which, by repeated inoculations of syphilitic matter, taken from primary sores, I bring the body into the condition that it is no longer susceptible of the action of the syphilitic virus.

It will, perhaps, be agreeable to you, gentlemen, before I proceed further, that I should lay before you a sort of *resume* of the history of this mode of treatment. Auzias Turenne, of Paris, performed inoculations of syphilitic matter upon animals to see whether this virus could be transferred to them, which up to that time had been denied. In this he was at length successful, and it was chiefly apes which could with the greatest facility be inoculated. After chancres had been repeatedly produced in the same ape, a great many skeptical physicians wished to see his inoculation, and a meeting was appointed in the *Jardin des Plantes;* the old ape was inoculated, and a still greater assembled a few days later to see the result. But when the ape was brought in nothing was to be seen. It may easily be imagined how this result was received, and that Auzias Turenne was ridiculed, but he did not on that account give up the method; he continued his inoculations, found that the old ape was not susceptible of fresh inoculations, but that a second ape after inoculations got chancres, though this ape also after a series of inoculations became unsusceptible.

Anzias Turenne now saw clearly that he had here a natural law, in itself resembling that which your immortal Jenner had discovered in the inoculation of vaccine matter, and we shall not upbraid him that his French blood now carried him away, and that his first idea was to employ the inoculation of syphilitic matter like that of vaccine matter—as a prophylactic. We cannot gainsay him that his train of ideas is logically correct, but it is not practically correct, for the great rule is, that he only gets syphilis who himself will have it.

As the result of this idea of employing syphilisation as a prophylactic, my friend Anzias wished at the time to syphilise all public girls, seamen and soldiers, and he would willingly have syphilised us all. No wonder, then, that such an idea met with all the opposition that it deserved; but it was not long until Anzias renounced his error, and at the same time there appeared an Italian, Sperino, of Turin, who showed by a series of experiments, that the syphilitic disease was cured during these inoculations, which Anzias, too, at the same time demonstrated. Still, this failed to reconcile physicians to the new method; such a prejudice had been raised against it that both the Academie de Medicine of Paris and the Academy of Turin condemned it without having the necessary materials before them for passing any judgment: the paradox involved in this method appeared to all so enormous as to render proofs of its absurdity unnecessary.

Lecturing in the University of Christiania upon syphilis, and having a section of the hospital devoted to the disease, I carefully investigated all that was advanced upon the subject, and ascertained that there must be some truth in it. I had, through a period of very many years, found that our treatment with mercury is highly unsatisfactory; I therefore considered that, from my position, it was my duty to give a trial to this new method, although it appeared to me as paradoxical as it did to all the world, and notwithstanding that it had been condemned by two Academies. But before I began, I laid down for myself certain limits to which I still adhere. It will be at once observed that I will not speak of the method as a prophylactic: this would be immoral: but neither am I at liberty to employ it in every case of syphilis; it is only when syphilis has become constitutional—when the syphilitic virus flows with every drop of blood through the system—that I allow myself also to inoculate it upon the skin.

The next question is, whether I shall employ syphilisation in every case of constitutional syphilis?

By a fortunate coincidence it happened that of two individuals whom I first took under treatment by syphilisation, one had not been treated for syphilis, while the other had been the subject of all the resources of our art. In the first the inoculations proceeded without difficulty, the symptoms gradually disappeared—in a word, I found myself upon the beaten path. In the other case, all was irregular, I could effect no order at all, and when my first patient was well, the phenomena in the second were still in full bloom. I immediately began to suspect that it was to the medicines previously given that this result was attributable, and on subsequently investigating this opinion, its truth has been most completely confirmed; so that I have made it a general rule to syphilise only those who have not previously been treated with mercury, whether this has been employed for primary or constitutional symptoms. But if I be asked whether syphilisation has not some effect in these cases, I can answer decidedly in the affirmative—it often acts incredibly. Dr. Simpson, of Edinburgh, has recently described two such cases which were sent over to me by Professor Simpson; what is there stated corresponds precisely with what I have myself noted, and of which any one may satisfy himself. But the reason why I do not undertake the treatment of such individuals is to avoid having relapses, which in these cases are apt to occur.

Now, in order to make my usual mode of proceeding as plain as possible, I shall suppose that a person laboring under primary syphilis consults me. In this case I treat the primary sore as a simple ulcer—I prescribe a weak solution of sulphate of zinc or such like, and occasionally employ a slight cauterization with nitrate of silver; I give no internal medicine, but make the patient come to me once or twice a week, that I may observe when the constitutional symptoms break out, for the earlier syphilisation can be commenced the better. So soon as I perceive the first constitutional signs, I commence the treatment by taking the matter from an indurated chancre or from an artificial pustule in a patient under treatment by syphilisation. I inoculate first on both sides of the chest, and make three punctures with a lancet precisely in the mode adopted in vcacinating. After three days pustules are developed, and then I inoculate again in the sides, taking the matter from the pustules produced by the first inoculation, observing carefully to make the second inoculation at a distance from the first, so that the sores may not become confluent. At the end of three days I make the third inoculation, taking the

matter from the pustules of the second inoculation; and now I continue to inoculate on both sides every third day, always taking the matter for the fresh inoculation from the pustules last formed, so long as this matter continues to afford a positive result. When it no longer takes I procure new matter in the same mode as for the first inoculation, and continue with this as with the first. This second matter will yield smaller sores and a shorter series than the first, and when it no longer takes I procure a third and proceed in the same manner. This third matter will produce very little effect, and I therefore pass to the upper arm, where I proceed in precisely the same mode as in the sides; and when no effect is any longer visibly in the upper arm I remove to the thighs, and continue there in the same way as in the two preceding places. By the time the inoculations are here brought to an end, from three to three and a half or four months have probably elapsed, the symptoms which manifested themselves from the commencement have disappeared, or if some slight symptom has remained this disappears spontaneously. It often happens that during the treatment a fresh outbreak takes place, and he who is not acquainted with the method believes that some other plan must now be adopted; another infers that syphilisation is of no avail. But, let them not be deterred by any symptom, not even the most severe iritis, which never requires anything but the instillation of a little atrophia. But happen what may, let them shut their eyes to it and continue the inoculations. The patient who, during the whole treatment, can attend to his business, feels, after it is completed, perfectly well, and may immediately expose himself to any hardships. He can endure wet, cold—in a word, everything which after mercurial treatment would render him liable to life-long illness. It is probable that I may now be asked as to the result at a later period for these individuals, and I shall speak first of the relapses. On the whole, I have treated 429 individuals, and of these 45 have come back, making 10½ per cent.; but, as we may calculate that some of those treated during the last year may return, I will assume that the relapses may amount to 12 or 13 per cent. But let us now examine more closely what is called a relapse after syphilisation. In many instances a single mucous tubercle, a small white spot on the tongue or in the throat—symptoms for which nothing more than external means are employed, and which the patients are treated only for a few days in hospital. So far as I at this moment remember, thirteen were taken again

under treatment with syphilisation, and two with iodide of potassium.

You will next ask whether tertiary symptoms have been developed in any of them. This has been the case, I believe, with three; but at the same time these individuals have been perfectly well—their general health has not, as so often happens after mercurial treatment, been broken down, and in those who have had relapses it has been good, and it is evident that in those who have had no relapse it has been particularly good.

We come now to the children of those who have been syphilised. Here we are not much better off than after the mercurial treatment; we see the same rule to prevail as after this last method, namely—that when the mother has been syphilitic, the first child or children is or are syphilitic; that they are healthy is the exception. If the father has been syphilitic, the children are, in general, healthy; that they are syphilitic is the exception.

You will next propose to me the question how I treat syphilitic children. I treat them precisely as I do adults; and it is interesting to see that the sores in these little ones bear in size a proportion to that of the child, and that the patients suffer less, and not more, than adults. The results of syphilisation in children with hereditary syphilis have not been brilliant; of forty-two children, twenty-two died, but I have taken under treatment every case that I have met with, and every one knows that in such children there are very often affections of the internal organs which lie beyond our power to cure. I cannot at this moment say how many little children with acquired syphilis I have syphilised, but they are not few, and of these only one died, the cause of death in that instance being croup after I had performed tracheotomy. Of adults two died—an old woman of dysentery, and a young woman of puerperal fever. This last case I forgot to include in the *resume* I have given in the *British Medical Journal.*

Now, in order to give you a definite idea of the confidence I have in this method after having practised it daily for thirteen years, I shall say only that if I myself, or any of mine, were so unfortunate as to get syphilis, I should employ no other means than syphilisation.

Still, a few words in conclusion, gentlemen. Vaccination has for many years stood alone; syphilisation now comes to join it. Shall we stop here? I believe not. Vaccine and the syphilitic matter are both animal viruses; we see them

contained under a similar law. May not also the other animal poisons be referred to a similar law? We see that Nature is simple in her diversity: should this not also here be the case?—should not glanders, hydrophobia, &c., sometimes be curable? Let us all seek to clear up this dark point in our science, and let us not, as hitherto, with respect to syphilisation, seek only to extinguish the rising gleam.—*Med. Times and Gazette.*

NEW PROCESS FOR MAKING FLUID EXTRACTS.

This invention relates to an improved process for producing that class of extracts which are made so that a certain amount of liquid shall represent, pound for pound, medically, the same quantity of crude drug, and which are generally obtained by extracting with a large excess of liquid and evaporating down to the desired strength. The menstrua used for making extracts are usually of an ethereal or volatile nature, such as alcohol of various strengths, and their strength changed by evaporation, as they are exposed for a longer or shorter period to the open atmosphere. If such menstruum is poured over a certain drug, it dissolves and extracts more or less of the soluble parts of the same, according to its strength; if the same liquid has to be poured repeatedly over the same drug, it loses its strength alcoholically, and some of those portions first dissolved are precipitated, and an imperfect extract is the result. The value of the extract being determined by its alcoholic strength when finished, the same or similar reasons render it objectionable to subject the extract when first obtained to the evaporating process, for by this process the volatile or spirituous part of the menstruum is first evaporated, and the weaker liquid is not capable of keeping in solution many of those parts of the drug which has originally been dissolved in the extract.

The objections are obviated by my process, which is carried out in the following manner:—I first weigh off a quantity of drug, and the same quantity or more by weight of the menstruum or liquid by means of which the extract has to be

made, a little more of the menstruum being required as a little moisture is left in at the last pressing. The drug being ground to a proper fineness, is then damped with a small portion of the liquid and subjected to heavy pressure (say from 800 to 1,000 tons); already all the liquid, or nearly so, together with such parts of the drug which have dissolved in the same, is expressed. A fresh portion of the liquid is then sprinkled over the drug, a little time being allowed for the liquid to dissolve the soluble parts of the drug, and the same process of pressing repeated until the whole quantity of the liquid is used up, and the drug is completely exhausted and the required measure obtained. By this process an extract is obtained which represents, pound by pound, the crude drug. The drug is perfectly extracted, and the menstruum preserves its original strength throughout, so that the same is capable of retaining in solution all those parts which are dissolved during the various stages of the process. Furthermore, by my process the tedious and expensive process by evaporation is dispensed with, and concentrated fluid extracts of any description can be produced cheaper and better than by any process heretofore applied, and as the application of heat is entirely avoided, the preparation does not receive the injury by heat that all such preparations are liable to if heat is applied to them, no matter how carefully done or moderate the degree of temperature, and furthermore, the changes thereby of strength of solvent are avoided. [From United States Patent, taken out by Mr. Spencer Thomas.]

PROCESS OF DISINFECTION.

The following memoranda on disinfection have just been issued by the Privy Council; and, considering the circumstances under which they are published, we feel bound to assist in giving them all publicity:

"1. For purposes of artificial disinfection, the agents which most commonly prove useful are—chloride of lime, quicklime, and Condy's manganic compounds. Metallic salts—especially perchloride of iron, sulphate of iron, and chloride of zinc, are, under some circumstances, applicable. In certain cases

chlorine gas or sulphurous acid gas may advantageously be used; and, in certain other cases, powdered charcoal or fresh earth.

"2. If perchloride of iron or chloride of zinc be used, the common concentrated solution may be diluted with eight or ten times its bulk of water. Sulphate of iron or chloride of lime may be used in the proportion of a pound to a gallon of water, taking care that the water completely dissolves the sulphate of iron, or has the chloride of lime thoroughly mixed with it. Condy's stronger fluid (red) may be diluted with fifty times its bulk of water; his weaker fluid (green) with thirty times its bulk of water. Where the matters requiring to be disinfected are matters having an offensive smell, the disinfectant should be used till this smell has entirely ceased.

"3. In the ordinary emptying of privies or cesspools, use may be made of perchloride of iron, or chloride of zinc, or of sulphate of iron. But where disease is present, it is best to use chloride of lime or Condy's fluid. Where it is desirable to disinfect, before throwing away the evacuations from the bowels of persons suffering from certain diseases, the disinfectant should be put into the night-stool or bed-pan when about to be used by the patient.

"4. Heaps of manure or other filth, if it be impossible or inexpedient to remove them, should be covered to the depth of two or three inches with a layer of freshly burnt vegetable charcoal in powder. Freshly burnt lime may be used in the same way, but is less effectual than charcoal. If neither charcoal nor lime be at hand, the filth should be covered with a layer some inches thick of clean dry earth.

"5. Earth, near dwellings, if it has become offensive or foul by the soakage of decaying animal or vegetable matter, should be treated on the same plan.

"6. Drains and ditches are best treated with chloride of lime, or with Condy's fluid, or with perchloride of iron. A pound of good chloride of lime will generally well suffice to disinfect 1,000 gallons of running sewerage; but, of course, the quantity of disinfectant required will depend upon the amount of filth in the fluid to be disinfected.

"7. Linen and washing appearel requiring to be disinfected should without delay be set to soak in water containing per gallon about an ounce either of chloride of lime or of Condy's red fluid. The latter, as not being corrosive, is preferable. Or the articles in question may be plunged at once into boil-

ing water, and afterwards when at wash be actually boiled in the washing water.

"8. Woolens, bedding, or clothing which cannot be washed, may be disinfected by exposure for two or more hours in chambers constructed for the purpose to a temperature of 210 to 250 degrees Fahrenheit.

"9. For the disinfection of interiors of houses, the ceilings and walls should be washed with quicklime water. The woodwork should be well cleansed with soap and water, and subsequently washed with a solution of chloride of lime, about two ounces to the gallon.

"10. A room, no longer occupied, may be disinfected by sulphurous acid gas or chlorine gas—the first by burning in the room an ounce or two of flowers of sulphur in a pipkin; the second, by setting in the room a dish containing a quarter of a pound of finely powdered black oxyd of manganese, over which is poured half-a-pint of muriatic acid, previously mixed with a quarter of a pint of water. In either case the doors, chimney, and windows of the room must be kept carefully closed during the process, which lasts for several hours.—*Chemical News.*

ON THE TREATMENT OF CROUP BY THE INHALATION OF LIME-WATER.

M. Kuchenmeister, of Dresden, has stated that diptheritic membranes are rapidly dissolved in lime-water; and this statement has been confirmed by M. Biermer, the Professor of Clinical Medicine in the University of Berne, who has repeated the experiment before the students of his class.

The *Brit. For. Med. Chir. Review* says that some pseudo-membraneous exudations, of considerable extent and thickness, were placed in a small glass of lime-water, and in the space of from ten to fifteen minutes, and before the eyes of the students, they disappeared, leaving only a very slight sediment at the bottom of the glass. M. Biermer was therefore induced to apply the lime-water locally in a living patient, and he has published the results, which were quite satisfactory. The patient was a girl, aged seventeen, admitted in-

to the hospital of Berne for croup, which had lasted four days. When she was admitted, she was nearly choked, cyanotic, and insensible, and she threw up portions of membrane only by means of the administration of some very strong irritant medicines. The symptoms of laryngeal constriction still continued, together with distressing dyspnœa; and pulverized water was employed to moisten the respiratory passages. The water employed, which was at first hot, and then boiling, produced considerable amelioration; and M. Biermer, having previously tried the experiment mentioned above with the false membrane and lime-water, supplied the pulverizer with lime-water. The improvement was evident as soon as the inhalations were commenced; the expectoration changed its character, and became purulent; the cough gradually disappeared, and the fever abated; and only hoarseness and a slight cough remained during the convalescence, which terminated in a complete cure. M. Biermer and all those who watched the progress of the case, were convinced that the inhalations had a solvent effect upon the false membranes; but the professor does not recommend an exclusive adoption of this local treatment, which softens and detaches the exudations, but does not reach the cause of the disease, which must be combated by constitutional remedies, calomel being considered the chief. The plan of M. Biermer has been followed by other practitioners; and M. Kuchenmeister has published a case of diptheritic pharyngo-laryngitis in a child of three years and a half old, treated in the same manner with complete success. Dr. Brauser, of Ratisbon, has also lately published a case of croup in a child of four years and a half old, treated in the same manner, and perfectly cured. M. Biermer insists particularly on the necessity of using the injections hot.

THE CIRCULATION OF SAP IN TREES, AND THE FORMAMION OF MAPLE SUGAR.

Trees are made up of fine tubes which extend from the root to the leaf, and it is through these tubes that the circulation of the sap is carried on. If a growing tree is pulled up by the roots, and the roots are placed in a vessel of water containing some colored solution which they will absorb, we

can trace the course of this colored solution through the tree by cutting notches into it at successive periods. The coloring matter is always found first in the body of the wood near the root, then in the wood higher up, and so on until it reaches the leaf; then it begins to appear in the inner bark near the leaf, and it passes down through the bark again to the root. This observation shows that the circulation of the sap is up through the wood, and down through the bark.

There has been much speculation in relation to the force that causes the sap of plants to circulate, but it has never been settled by observation and experiment. It is pretty well established that sap circulates in the winter, though less rapidly than in the summer, and less rapidly at that time in deciduous than in evergreen trees.

The solid portions of thoroughly dried wood, and other parts of plants, are composed mainly of water and charcoal. When charcoal is burned, a small portion of ash is left. This ash is the mineral or inorganic portion of the substance of the tree, and consists principally of potash, lime, and flint or silex. That portion which burns is carbon. In burning, the carbon unites with oxygen to form carbonic acid, an invisible gas that floats away in the atmosphere.

The water and the inorganic matters enter the tree through the roots; the carbon enters mostly through the leaves. Carbon forms about one-half of the solid substance of the tree, and water the other half.

Water is composed of two elements, oxygen and hydrogen, in the proportion of eight pounds of oxygen to one of hydrogen. These in entering into a chemical combination with carbon, lose the liquid state of water, and form the various solid substances which make up the body of the tree.

In its course the sap undergoes important transformations. The trunks and leaves of trees are scenes of constant chemical operations, many of them more mysterious than any of the operations of the laboratory. One of these is the decomposition of carbonic acid in the leaf. The affinity of carbon and oxygen is very strong indeed, and there are few forces in nature that can rend these two elements asunder; but the combined action of light and vegetable life is separating them throughout every day in the leaves of all growing plants. Carbonic acid is absorbed from the atmosphere by the leaf, its two elements are torn apart, the oxygen is returned to the air, and the carbon combining chemically with other elements in the sap, is carried to the places where new wood is being

formed, and is there deposited in its proper place to help build up the structure of the tree. The symmetrical order in which the carbon is deposited in a try may be seen by looking at a piece of charcoal.

If wood is examined under a powerful microscope, it is found that the tubes through which the sap circulates are formed of minute sacs or cells. The substance of which the walls of these cells are formed is called cellulose. It has been the subject of a great deal of chemical research, and is found to consist of carbon and water, or more strictly, of carbon and the elements of water, oxygen and hydrogen. Cotton and linen are almost pure cellulose. Each atom of cellulose contains twelve atoms of carbon, ten atoms of hydrogen, and ten of oxygen, C_{12} H_{10} O_{10}. Starch, gum, and sugar all have the same composition, C_{12} H_{10} O_{10}. This is one of the wonders of chemistry, that substances composed of the same elements, combined in the same proportion, should have properties so different as gum, starch, sugar, and cotton or linen fibre. Their different properties must of course result from the varied modes in which the atoms are arranged.

Besides these four substances there is one other constituting a considerable portion of the body of trees, which is also formed of the same elements as the others, but in slightly different proportions. This is lignin. It is an incrustation on the inner surfaces of the cell walls, and its office appears to be to strengthen and stiffen these walls. Its constitution is C_{12} H_8 O_8. In this case, as in the others, there are just as many atoms of hydrogen as of oxygen; these two elements enter into the compound in the same proportion to each other as that in which they unite to form water. If a tree or other plant is thoroughly dried so as to expel all of its uncombined water, nine-tenths of the remaining substance consists of the five compounds, cellulose, lignin, starch, gum, and sugar, and all of these are composed of hydrogen and oxygen in the same relative proportion as that in which they exist in water, chemically combined with carbon.

Why it is that the atoms of these substances are so arranged in one part of the plant to form cellulose, and in another to form starch; why it is that they are so arranged in one tree as to form gum, and in another to form sugar, are mysteries which lie beyond the present boundaries of human knowledge.

There is one other organic element, and several inorganic, besides those mentioned, which enter, though in small quantities, into the constitution of plants, but a full discussion of

the part which they perform in vegetabl economy would demand an exhaustive treatise on agricultural chemistry and vegetable physiology.—*Am. Drug. Circular.*

SYNCOPE—ASPHYXIA—POISONING.

In the *Dublin Med. Press* Dr. Brown Sequard publishes a lecture on the brain and nervous system, from which we condense some of the closing remarks, eminently interesting and practical:

In cases of syncope—not death, but those conditions which are on the verge of death, and which lead to death, if nothing is done to relieve them—there are very frequently means of restoring life. In animals, very frequently, though the heart is quite stopped, we can by simply pressing on the sternum, and by giving a hard push to the heart, make it beat. It will not beat long if the cause of the syncope is a powerful one; but beat it will, and if the cause of irritation is continued, it will continue to beat, and in that way the patient may be often revived. This is not all. If there is added another most powerful cause of revival, and which is directly the reverse of what John Hunter did upon himself, when he found he was in a state of syncope one day at College—if instead of breathing as quickly as possible, the patient's breathing is stopped altogether, just as if we were trying to kill him by suffocation, we revive him by producing a state of asphyxia, the patient is saved, he will have a struggle, and will come out of it very quickly. Nothing is more powerful to make the heart beat than an accumulation of carbonic acid in the blood. There are other features about syncope of great importance. If there is little blood circulating, you may in a moment throw something like one or even two pounds of blood into the heart by simply pressing on the four main arteries of the body. If you press those four arteries you prevent circulation going on in them, and at once an immense quantity of blood returns from the venous system to the trunk, and there is an immediate revival.

In regard to *asphyxia*, experiments show clearly that of two animals, one of them with its temperature, both dipped into water at the same time, the one having its temperature very low will survive the other twice, three times, and sometimes even five times; the duration of life under water being extended sometimes to twelve or fifteen minutes. *The greater the previous diminution of temperature the longer the duration of life.* There is another fact which is a very interesting one. It is well known that persons who have fallen into very cold water have in many cases been drawn out and revived after a number of minutes' immersion. Now, in experiments performed upon animals by applying galvanism to the part, so as to stop the heart's action, which is just the effect a fall into water will produce, we find life will last much longer, the animal will be able to survive a much longer stoppage of the heart's action from having had an attack of syncope just before the asphyxia. This case, then, is exactly the reverse of the former. In one, syncope was cured by asphyxia, in the other asphyxia is less mortal, because syncope previously existed.

In cases of death by asphyxia, if the temperature is low, there is one fact very similar to what we see in cases of sudden emotion producing arrest of the heart's action when the individual falls into cold water, and that is, that in the two cases—diminution of temperature, or dipping into water—the heart beats very much slower. Any patient attacked with asphyxia, whose temperature is much diminished, has a slow beating of the heart, and whose blood is red, is not exactly an asphyxiated patient; there is a mixture of syncope and asphyxia, and the patient has much more chance to recover. If you try to raise the temperature of such a patient, you run the risk of killing him.

Poisoning is often the cause of death by producing such diminution of temperature as is incompatible with life. Take, for instance, two animals which have been poisoned with the same quantity of opium. Supposing the temperature to be 60° in the room, lay them both on a table, one covered carefully with warm clothes, the other exposed to the cold, you may observe *pari passu*, that the one which is kept warm will survive, while the other will die. This fact we find with almost every poison of an organic nature, that there is considerable diminution of temperature produced, if not *per se* sufficient to cause death, enough, at any rate, to add a powerful cause to the other causes existing. This diminution of tem-

perature is a feature which we can fight against, and it is therefore of the utmost importance in cases of poisoning to use every means to keep up the temperature of the body.

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PRICES CURRENT.

It is curious to compare the prices current as issued by the various manufacturers of what, in contradistinction to chemicals, are called pharmaceuticals. Take for instance the class of Fluid Extracts, one list before us quotes Fluid Extract of Sarsaparilla (Comp.) at $2.85 per lb.; another quotes the same at $1.25. One quotes Fluid Extract of Buchu at $3.25, another the same at $1.25, and so on, the prices varying from twice to three times as much on one list as on another. Now a fluid extract, according to every acknowledged authority, is made, with a very few well-known exceptions, of such strength that for every troy ounce of the drug there must be just a fluid ounce of the Fluid Extract. This is the strength prescribed by the U. S. Pharmacopœia, and that which of course forms the basis of their employment in the treatment of disease, and especially in making the other preparations of the same drug. Where a troy ounce of a drug is used in making a pint of its syrup, a fluid ounce of its fluid extract added to fifteen fluid ounces of simple syrup, would be expected to furnish a pint of syrup of corresponding strength. So simple and easy is this method of preparing the weaker liquid preparations used in medicine, that it is now very much resorted to by Pharmaceutists and Physicians, and is recognized in several instances in the Pharmacopœia. What, then, is the reason that Fluid Extracts differ so greatly in price from different makers? Is it because some possess facilities for making them so much cheaper than others, or must we look for other causes? This, we think, can be answered conclusively thus: Throwing out of view the exact processes laid down in the Pharmacopœia, to which some manufacturers conscientiously adhere, there are only two considerations which can materially affect the economy of extraction of drugs—these are the completeness of the means of pressure and of the recovery

of the excess of alcohol employed. At the present enormous cost of alcohol it is essential that not a drop shall be wasted to secure an economical result; hence most skilful percolation must be resorted to, connected with pressure for securing every drop of the percolate, and then well adjusted apparatus for distillation must be used in concentrating the liquid. These requirements are met, perhaps, by all the leading manufacturers, and yet this great disparity in prices. The true reason is, undoubtedly, that some few manufacturers make these preparations of full strength, while the majority wholly ignore the standards of the Pharmacopœia, and sell preparations of just such strength as suits themselves. We will not ask whether this is justifiable on the ground of professional ethics, but we put it to the reader whether it is dealing justly towards that very large class of purchasers who are led by names, with very little knowledge as to the real merits of a preparation. If a fluid extract may represent one-fourth its weight of a drug, or may be equal to its own weight, according to the whim of the maker, what value can it have in any rational scheme of medicine? As to the interest of the purchaser, it evidently lies in this, as in all other cases, in getting the best. If a man will ignore the standards of good practice in his manipulations, what confidence can one have in his fairness in business transactions? On the other hand, inflexible honesty in manufacturing indicates a similar principle in dealing. We should not think it necessary to go over these obvious points, but for the purpose of calling attention to an invariable rule which may be applied to these price currents. When a Fluid Extract is offered at a given price, let the buyer count up the cost of the drug, remembering that a pint will take sixteen troy ounces (equal to a commercial pound and near two ounces), with the menstruum, almost always alcoholic, and which by every process is liable to some waste, and the sum of these items will be the minimum cost of the preparations. To get at the fair selling price, a margin must be added for fuel and labor, and a profit of not less than twenty per cent. to the manufacturer. If the price quoted falls much below this, depend upon it there is a deficiency somewhere, and the apparent cheapness does not imply economy to the purchaser.

CARBUNCLE.

Our readers may remember an appeal addressed to the public by a French parish priest, in order to obtain funds for the publication of a pamphlet, in which an infallible cure for carbuncle was to be revealed. This plan seems to have been abandoned for the simple one of publishing the remedy in one of the medical journals; for we find in the *Union Medicale* an article by Dr. Topinard, in which he describes the Dardelle secret as follows:—"Prepare a round piece of linen of a sufficient size to cover the whole diseased part, and spread thereon a slight film of storax ointment, and then a layer of corrosive sublimate (be-chloride of mercury) of the thickness of a two-franc piece. The plaster thus prepared is laid with the greatest care upon the part affected, and kept in its place with strips of sticking-plaster. After twenty-four hours this plaster may be removed, and it will then be infallibly found that the carbuncle or pustule has been destroyed. The place must now be dressed three times a day with storax ointment spread upon linen; and at every dressing the part must be fomented with a mixture of the oil of linseed, cammomile, and hypericum. In the course of eight or ten days the eschar falls off, and the sore is treated like a common one."

This remedy, discovered by a blacksmith of the name of Dardelle, has never been known to fail. Dr. Miso, from whom the prescription has been obtained, has used it these ten years with invariable success; and Dr. Topinard concludes with reason that sublimate exercises a specific action in such cases. It is the more desirable that such a remedy should be widely circulated, since this very morning we find a new case of a man at Annouville-Vilmesnil, near Fecamp, who, having been stung by a venomous fly, neglected applying proper remedies, and the consequence is that his finger has had to be amputated to prevent gangrene. He is now doing well.—*Galignani.*

INFANTILE SYPHILIS.—The use of mercurials is quite unnecessary. Chlorate of potash given in two-grain doses thrice daily is all the medicinal treatment required. The nose usually requires well syringing with warm water. (Mr. R. W. Dunn, *p. 224.*)

AN ENGLISH CURE FOR DRUNKENNESS.

There is a prescription in use in England for the cure of drunkenness, by which thousands are said to have been assisted in recovering themselves. The receipt came into notoriety through the efforts of John Vine Hall, commander of the Great Eastern steamship. He had fallen into such habitual drunkenness, that his most earnest efforts to reclaim himself proved unavailing. At length he sought the advice of an eminent physician, who gave him a prescription which he followed faithfully for several months, and at the end of that time he had lost all desire for liquor, although he had been for many years led captive by a most debasing appetite.

The receipt, which he afterwards published, and by which so many other drunkards have been assisted to reform, is as follows:—Sulphate of iron, five grains; magnesia, ten grains; peppermint water, eleven drams; spirit of nutmeg, one dram; twice a day. This preparation acts as a tonic and stimulant, and so partially supplies the place of the accustomed liquor, and prevents that absolute physical and moral prostration that follows a sudden breaking off from the use of stimulating drinks.—*Eclectic Med. and Surg. Journal.*

SUCCESSFUL SURGICAL OPERATION.

The French papers tell of the success of a curious surgical operation, heretofore considered impossible. A young girl, turning her head too quickly, dislocated some of the upper cervical vertebræ. A paralysis of the lower limbs and the trunk ensued; the diaphragm alone retained its sensation. Apparently the patient had but a few hours to live. M. Maisonneuve resolved to attempt to bring the vertrebræ into the former position. With the assistance of a fellow-surgeon, he seized the patient by the top of the head and the chin, and gave a gentle rotary motion to the vertebræ, which resulted in bringing them into their former position. The paralysis ceased almost immediately, and a week after the patient was able to walk as though nothing had happened to her.

CLINICAL LECTURE ON DIPHTHERIA.

By EDW. HEADLAM GREENHOW, M. D.,
Assistant Physician to the Middlesex Hospital.

GENTLEMEN:

I propose to bring before you the subject of Diphtheria, and to take as the basis of my lecture two cases which have recently been in the hospital, and which were characteristic examples of the two principal varieties of this formidable complaint—namely, of that form in which the urgency of the case is due to the local manifestations of the disease, and of that other form in which the danger arises from the general constitutional affection. The former of these is especially characterized by the existence of symptoms of apnœa, and the pressing danger is caused by the more or less complete occlusion of the air passages by the membraniform exudation from which the disease derives its name of diphtheria. The latter, on the other hand, is characterized by the predominance of symptoms of asthenia caused by the intensity of the general disease, and the danger to be apprehended is the general exhaustion of the vital powers. You should, however, fully understand, that although these two forms of diphtheria are so diverse in their more silent characters, and the kinds of danger which attend them, there is yet no doubt of their being, as I have said, only varieties of one and the same disease, for they not only occur constantly during the same epidemic, but very often also in the same household at or about the same time. I have seen many examples of this, and one, which occurred only a few months ago, was especially striking, on account of the severity of both forms, causing death rapidly in both cases. I was called to see a young gentleman aged fifteen, who had come home from school, I believe, with the complaint, and was suffering from most urgent laryngeal symptoms of which, in fact, he died the same evening, almost immediately after the operation of tracheotomy. Four days afterwards his sister, aged eight years, was taken ill with diphtheria of the other, the asthenic form, which also ran an unusually rapid course, and proved fatal on the fifth day of her illness, without the supervention of any laryn-

geal symptoms. Another proof of the identity of the disease in the two different forms is, that although, in many cases, their separate characters are as sharply marked as in my description above, yet other cases occur side by side with them which partake more or less of the characterr of both forms. I say more or less, because in fact one of the two classes of symptoms does usually predominate.

Although the two varieties of diphtheria to which I propose directing your attention to-day are the most important, I must remind you that they are by no means the only forms of this disease. In every epidemic there are many cases in which neither are the air-passages involved nor are there any urgent symptoms of general constitutional affection. Many of these would perhaps at another time be regarded merely as cases of common inflammatory sore-throat; but, occurring as they do at the same time, and frequently in the same household with characteristic cases of diphtheria, we cannot but refer them to the same category. Several of you saw, the autumn before last, a rather severe case of diphtheria, which came from a house in the vicinity of the hospital in which sore throat had previously been prevalent. The lad, aged sixteen, was a shoemaker's apprentice, and slept in the same room with three other boys. The family consisted of eight or nine persons, five of whom, including the three fellow-apprentices, had been under my care as out-patients in quick succession during the preceding fortnight, for sore-throat of varying intensity, but unaccompanied by exudation. Lastly, but still forming a part of the same epidemic—if I may be allowed to apply the term to so limited an outbreak of disease—this lad presented himself, with symptoms of so great prostration that we were compelled to take him into the hospital. His fauces were coated on both sides with the characteristic false membrane, and although he made a good recovery, his illness was severe. Albumen was found in his urine on the day after his admission, and he only regained health and strength after a prolonged and tedious convalescence. Again, cases characterized it is true by more or less diphtheritic exudation in the fauces, but unattended by any urgent symptoms, form a large proportion of every epidemic. Sometimes it even happens that almost all the cases in particular epidemics are of this mild kind. Such cases usually recover under any rational treatment, and it is the consequent great apparent success in treating them which has sometimes led even honest and worthy practitioners to promulgate as a specific for diphtheria

some medicine with which they have treated large numbers of cases; the truth being that by far the greater proportion of these cases required only common care, and would probably have recovered without any medical treatment at all. But although these mild cases so often do well with any or no particular medicine, I must not dismiss them without a word of caution to you, on the one hand, against over-treating them, and, on the other, against neglecting them. I have seen serious mischief ensue from what I must term meddlesome treatment of such cases, especially when in the form of local applications; and yet even the mildest case requires careful watching, because, either by the invasion of the air-passages or by the accession of constitutional symptoms, a case which in its first stages appeared of the mildest kind may subsequently assume a most serious form.

With these preliminary observations, and begging you to bear in mind that I can only bring a small section of my subject, so to speak, before you to-day, I proceed to consider the first of the two grave forms of diphtheria which I have described, as it was exemplified in the more recent of our two hospital cases.

Mary Ann M——, aged eleven years, was admitted into Northumberland ward on the 24th of April, under the care of my colleague, Dr. Thompson. She had been ailing with cold for about a week, and had had sore throat from the first. Two days before admission she had commenced coughing, and at the same time her voice had become hoarse; but, notwithstanding her indisposition, she had continued able to play about with her companions as usual in the open air until the afternoon of Sunday, April 23d, when dyspnœa came on more decidedly, the cough and hoarseness increased, and she became so ill that on the following morning her mother procured her admission into the hospital. At the time of admission her breathing was difficult, labored, and stridulous, and she spoke in a faint, husky voice. Her face was flushed, and the expression of her countenance anxious. Her skin was hot, pulse about 140, respirations about 24 in a minute. Mr. Waymouth, the clinical assistant, under whose observation she first came, states that at the time of her admission there was a small patch of false membrane on the fauces; but when I saw her, two or three hours later, this had disappeared. The case seemed so urgent that Dr. Thompson requested his colleagues, including myself, to see the patient, for the purpose of considering the propriety of performing the operation

of tracheotomy. I found both tonsils enlarged, somewhat ragged-looking and reddened; the pillars of the fauces were also of a dusky-red color, and the glands at the angles of the jaw, especially those on the right side, were slightly enlarged. The tongue was moist, and coated with a white fur. The urine was normal in appearance, and contained no albumen. On examining the anterior part of the chest, I found a deficiency of resonance in the left infra-clavicular region, and the respiration on both sides of the chest sibilant, with slight rhonchus in the upper part of the left lung. I was informed that there was dulness on percussion over the greater part of the left side of the thorax posteriorly, but the child was so ill that I did not attempt to verify this fact for myself. Immediately after the consultation tracheotomy was performed by Mr. Moore, and I shall presently state to you what were my views of the case, and the grounds on which I advocated a decision in favor of operating. From two and a-half to three ounces of blood were lost during the operation, and the pulse at once fell to 128, but shortly became exceedingly feeble. The respirations became comparatively tranquil, and the child fell into a quiet sleep. At eleven P. M., the pulse was 140, the respirations 34; the patient had slept well at intervals, and had partaken very freely of the strong beef-tea and brandy ordered for her. On the 25th it was reported that she had passed a good night and had taken abundance of nourishment. She was perfectly calm, her pulse from 130 to 140; but the respirations, though unembarrassed, were very frequent, being nearly 50 in a minute. The breathing was found to be tubular, and the percussion resonance over the whole of the thorax posteriorly; the respiration over the right scapula was also slightly bronchial; the deficiency of resonance and bronchial breathing below the left clavicle remained as before the operation. Throughout the day and night she continued stationary, coughing a good deal, but expectorating freely, until early on the morning of the 28th, when she became restless and began to have difficulty in raising the expectoration. During the day her breathing became more and more embarrassed, and gradually sank, and died at half-past four P. M., about 48 hours after the operation.

At the post-mortem examination a shallow, ragged ulcer was found on the surface of each tonsil, but both throat and fauces were free from exudation. A small patch of false membrane was lying loose on the under surface of the epiglottis, and the larynx and also the trachea for the space of an

inch and three-quarters downwards, were almost entirely lined with a tough false membrane of about the thickness of kid leather, for the most part lying loosely on the mucous surface, but here and there so firmly attached as to require much force to tear it away. The incision made by the operation had passed directly through this membrane. The larynx, trachea and bronchi contained a large quantity of thick, tenacious, muco purulent secretion. The mucous membrane of the larynx and trachea was generally somewhat reddened, and presented distinct patches of a still deeper redness. On tracing the left bronchus downwards from its origin, the smaller tubes were found to be inflamed and filled with thick mucus. The upper lobe of the left lung was collapsed, and the posterior part of the lower lobe was dark colored and much congested. The right lung was also slightly congested, but otherwise appeared to be normal. The rest of the viscera were healthy.

I have spoken of this case as illustrating one of the forms of diphtheria, because I regard it as having really been a case of that disease, and not one of ordinary croup; and I am led to this conclusion by the fact that sore-throat, although of a mild kind, had preceded the laryngeal symptoms for some days, and still existed at the time of the patient's admission to the hospital. This accords with the ordinary history of diphtheria affecting the air-passages; it commences in the fauces, and usually, after a shorter or longer interval, creeps downwards into the larynx and trachea. The interval between the commencement of the illness and the accession of laryngeal symptoms may indeed be very brief, sometimes not exceeding a few hours, but in my experience it has more frequently been several days, though very rarely protracted beyond a week. One reason why laryngeal diphtheria appears to commence suddenly is the fact, to which I have already adverted, that the earlier symptoms of cases which ultimately becomes dangerous are often of the mildest character, and consequently sometimes altogether escape the observation of friends or attendants until the symptoms of actual croup give the alarm. Last autumn I saw, at the request of her medical attendant, a little girl, aged four years, whose indisposition had been so entirely overlooked by her parents, that they had brought her up from the country only a few hours before I saw her, and until the dyspnœa and stridulous breathing suddenly came on, and induced them to send for medical advice, were purposing to take her on to Gloucestershire. Yet not only were the

tonsils enlarged, with a patch of exudation, the size of a six-penny-piece, on each, but the fauces were generally injected, and the glands at the angles of the lower jaw swollen; showing beyond doubt that the disease must have been progressing for some days, even if we had not ascertained on inquiry that the child had had slight sore-throat for nearly a week, which had not, however, prevented her from taking her food, and going about as usual. In fact, in that case, as well as in the case we are considering, it was evident to me, when first called for an opinion, that the disease had already reached a stage in which, unless speedily relieved, the patient could not survive many hours, and in which the only possible modes of relief were either by means of the spontaneous expulsion of the false membrane, which I felt assured was choking up the larynx or trachea, or else by means of the artificial admission of air to the lungs through an opening in the trachea. Now and then, though very rarely, I have known cases of this kind recover, when apparently desperate, in consequence of the spontaneous separation and expulsion of a mass of false membrane, bearing a more or less close resemblance in shape to some portion of the air-passages. I had some time since in my possession two such portions of false membrane, one of which formed an exact cast of the lower part of the trachea and the first portion of the bronchi, and the other an equally accurate cast of the larynx and upper part of the trachea. Both had been expelled by patients who were apparently almost moribund, and in both cases the expulsion was followed by recovery. I also some years ago found in the post-mortem examination of a little girl, whom I had seen once a few hours before death, a deposit of false membrane lining the whole of the larynx, and extending nearly an inch downwards into the trachea. This false membrane formed a complete tubular cast of the parts, but was almost entirely loose, being only attached at a few points to the mucous membrane which it overlaid. Thick and dense in the larynx, it became gradually thinner in the trachea, until it terminated in an extremely thin, soft, and scarcely coherent pellicle. The child had died very suddenly a few hours after I had seen it, and the immediate cause of death appeared to have been the partial detachment of the false membrane lining the larynx, which had choked the passage, and barred the admission of air. I was much mortified to find after death that possibly the operation of tracheotomy might have saved the child's life, and that the false membrane, being loose, might not improbably have

been seized with a pair of forceps, and drawn through the wound. I should add, however, that the spontaneous detachment and expulsion of the membraniform exudation, whether entire or in flakes, by no means insures the patient's recovery. The temporary relief is indeed for the most part very remarkable, and encourages the hope that the patient—who, although only a short time before apparently in the last struggle for life, may now be sleeping calmly—is on the high road to perfect convalescence; and in some instances this may really be the case. But such hopes are too often illusory, for the same tendency to repeated renewal of the false membrane by fresh exudation, which is frequently seen in diphtheritic affections of the fauces, exists also in the larynx; and, unless the local inflammation itself be upon the wane, it is too frequently found, a few hours after the expulsion of the former cast, that a new one occupies its place, and that the patient is in a worse state than before, being less able to cope with the fresh attacks of dyspnœa, and less likely to have strength to expel the obstruction. In fact, as long as the inflamed mucous membrane continues to pour out the liquid exudation which coagulates into the diphtheritic deposit, so long must the process of formation go on. It is by the persistence of this process that what was at first a mere semi transparent pellicle on the fauces becomes in the space of a few hours a dense membrane, and that the latter often increase in thickness from day to day, notwithstanding the waste going on at its free surface. And so therefore I regard it as probable, seeing the great rapidity with which the membrane re-forms upon the fauces when it has been artificially detached, that, unless the inflammatory affection be really on the decline, the processes of exudation and coagulation may go on for a time even more rapidly after the expulsion of the false membrane from the larynx than whilst it still covered the diseased surface.

To return, however, to the case of our little hospital patient. I was convinced, as already said, that the only possible chances for her life lay either in the almost immediate expulsion of the false membrane or in the speedy performance of tracheotomy. The former is, as I have explained, an event of rare occurrence, never to be counted on in any particular case, and the issue of which is exceedingly uncertain when it does happen; the latter alternative of operation has very frequently failed in such cases, and seemed especially likely to do so in a case in which the left lung was already partially consolidat-

ed, and the bronchial membrane probably inflamed. Nevertheless, considering that the child's suffering was urgent, that its death in a few hours seemed inevitable unless relief could be given by the operation, and that there were no severe constitutional symptoms to contraindicate tracheotomy, I spoke very decidedly in favor of its being performed. The event proved that in the circumstances the operation was not only justifiable, but right, for it was scarcely over when the child's breathing became comparatively tranquil, and she fell into a quiet sleep almost as soon as laid down in bed; and although it is true that in this case, as in too many others, life was not saved, it was certainly prolonged, the most urgent suffering was permanently relieved, and death came in a gentler and less distressing form than it would otherwise have done.

The immediate causes of death in this case were, doubtless, the collapse of lung and the plunging up of the trachea and primary bronchi with tenacious mucus, which the child was unable to get rid of by expectoration; for the lung-tissue, although collapsed, was not inflamed, and the bronchitis was scarcely in itself severe enough to have proved dangerous, except as a complication of the graver disease. In fact, however, I regard both the bronchitis and the collapse of lung as having resulted from the laryngeal affection; the former having probably been mainly occasioned by the gravitation downwards of the acrid fluid, from the larynx and trachea consequent upon the patient's inability to expectorate. The collapse of lung doubtless arose, as it so often does in the bronchitis of children, from the imperfect admission of air into the lungs during inspiration, partly in consequence of the obstruction in the larynx and trachea, partly from the choking up of the bronchial tubes with tenacious mucus. This latter, again, was in a great measure owing to the inability to cough it up, consequent on the want of power to take such a full inspiration as necessarily precedes the act of coughing. This was therefore eminently a case of diphtheria fatal in consequence of the local manifestations of the disease, and it was in the conviction that these constituted the real danger of the case that I entertained no doubt respecting the propriety of endeavoring to save the patient by tracheotomy.—*Lancet*, June 3, 1865.

EDITORIAL AND MISCELLANEOUS.

RUSH MEDICAL COLLEGE.

The Twenty-Third Annual Course of Lectures was opened on the 4th instant. The general Introductory Address was delivered by Prof. Blaney, who had been absent on duty in the army during the past three years. The Lecturer, after welcoming the large class of students present on the occasion, referred in feeling and appropriate terms to the happy conclusion of hostilities within our borders, and paid a merited tribute to the valor of the soldiers of the Union, and the efficiency of the Medical staff of the army. He then admonished those just commencing the study of Medicine, of the great labor necessary to acquire a knowledge of the principles of the profession—instancing the importance and extent of research necessary to master the individual branches, as Anatomy, Physiology, Pathology, Surgery, Practical Medicine, Therapeutics, &c., portions of which were strikingly beautiful and pertinent. The address, as a whole, was well conceived, and abounded in good advice to the young men of the class, and was admirably calculated to raise the respect for our noble profession in the minds of all who were fortunate enough to hear it.

The course opens with every prospect of being among the most successful and satisfactory which have latterly attended the history of the College.

Messrs. Editors Chicago Medical Journal: Surgeon Winch, in concluding his excellent paper on Chronic Diarrhœa in the August number of the JOURNAL, speaks of the use of Nux

Vomica in that disease. My preceptor, Dr. J. T. Boyd, of Indianapolis, used it very successfully in his practice. And I have myself, in a number of cases of returned soldiers, prescribed it with very great benefit.

The cases in which it seemed to be most especially indicated and in which I have seen most benefit follow its use, were those characterized by anæmia, loss of appetite, indigestion, and great debility. In some cases no other remedies were used—excepting, of course, the proper dietetic measures—and with well-marked success. Most of these cases had been previously treated in the army, from three to six months, and even longer. And as the continuation of astringents, opiates, and in some cases, purgatives, had utterly failed, I concluded it would be useless to persue that course longer. After taking the Nux Vomica for a short time—generally from two to three weeks—the appetite returns, digestion is more perfectly carried on, the patient gains strength, and the discharges gradually become more consistent and less freqnent. The *rationale* of its cure I will not pretend to give—but merely to state that the experience I have had with it in a considerable number of cases, is very much in its favor, and would urge for it a trial. I have, in all cases, used the tincture. Will not some one give to the profession the benefit of a more extended experience?

DAVID R. JOHNSTON, M. D.

MUNCIE, IND., Sept. 7th, 1865.

We have received from the publishers the following works. Want of space prevents a notice in this number:

The Student's Book of Cutaneous Medicine and Diseases of the Skin. By Erasmus Wilson, F. R. S.

Lectures on Diseases of the Stomach. By William Brinton, M. D., F. R. S. Lea & Blanchard.

The Use of the Laryngoscope in Diseases of the Throat. By Morill Mackenzie, M. D. Lindsay & Blakiston.

Physician's Visiting List for 1866. Lindsay & Blakiston.

CHICAGO
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ORIGINAL COMMUNICATIONS.

OPENING LECTURE
AT THE
TWENTY-THIRD ANNUAL COURSE OF LECTURES RUSH MEDICAL COLLEGE.

By J. V. Z. BLANEY, M. D.,
Professor of Chemistry and Pharmacy.

[Published by request of the class.]

GENTLEMEN:—

I have the honor to have been selected by my colleagues to convey to you their cordial welcome to the Lecture Rooms of this Institution, and to express their satisfaction that so many who have previously, and so many who have not heretofore, attended their lectures are present, to exchange greetings with them, on this the first day of the Twenty-third Annual Course of Lectures of Rush Medical College.

It is with much pleasure that, after an absence of several years, I find myself once more restored to peaceful avocations and resuming duties which, for years past, I have performed in this institution. Though I have regretted the long absence

which I thought was imposed upon me by my duty to the Federal Government, after that I had once enrolled myself on the Medical staff of the army of the Union, I can not regret for a moment the experience which I have had, or the humble service which I have been privileged to render in the glorious cause of the assertion of the integrity of the Union of these United States, and the establishment of universal freedom to all those who respect the rights of other citizens of a common country.

Gentlemen, our country has passed successfully through a crisis and a contest such as no other country, of ancient or of modern days, has ever experienced. Those only, who have taken part in the contest, can appreciate the fierce fury of the conflict when Greek met Greek. At last victory has perched upon our banners, and peace with her genial influences, has once more kindly resumed her sway over our great and still glorious republic. The fierce onslaught of contending hosts has passed; the roar of artillery and the rattle of musketry is no longer heard in the land; the bulletins no longer report the thousands of killed and wounded. Thanks be to God, the struggle of brethren who should have been linked in the most indissoluble fraternal bonds, for the common good, and for the cultivation of peaceful arts, is over, and a sweet, gentle peace falls, like a soft and kindly twilight, over all the land, hushing to silence all discordant sounds, and preparing all for the sweet repose which follows unusual exertion. God grant that the dawn of a new era, when science, literature, and art may flourish as never before, may be the result of the bright prognostics of the sunset of our late lamentable, but unavoidable struggle.

Gentlemen, those of you who are about to prepare yourselves for a professional life, if living to the ordinary age usually granted to those who pursue the liberal professions, will see great things. Your lines have fallen in pleasant places. Do your duty, and your whole duty to yourselves in preparation for your work, and the times themselves will afford you

opportunities for success, for usefulness, and for personal celebrity, such as your predecessors in the Medical profession have never known. Only be true to yourselves and community will recognize and appreciate your qualifications, and demand your services.

Your opportunities for acquirement of the principles of the profession you have chosen are almost unlimited. All the knowledge which has been accumulated by ages of observation and experience, is at your command. It has been quaintly said that children begin where their parents leave off. If or not this be true in the domestic relations, it is eminently true when predicated of the liberal professions, provided always that the pupil avails himself, to the extent of his ability, of the experience and knowledge acquired by his predecessors. Excepting under oppressive governments, which have temporarily stifled its efforts, science has never gone backward. Only in the dark ages were the arts lost. In a liberal age, and in a liberal community, under a liberal government, science always advances. Every age adds to her treasures, and upon those who have the privilege of benefiting by the labors of a previous age, rests the responsibility, not to themselves alone but to the age in which they live, to community, to science herself, of whom they profess to be votaries, that they will not squander, but will add to the bountiful wealth which has been prepared for their entertainment; a wealth of knowledge earned by the labors of thousands, who have worked earnestly and faithfully in her cause, many of whom have gone to their last rest, unknown and unsung, but will reap the ripe fruits of their labors in the cause of humanity in a better and more appreciative atmosphere.

Gentlemen, I do not propose to attempt to impress upon you the importance to our common humanity of the studies in which you are about to engage, or the necessity of rendering yourselves proficient as far as practicable, before engaging in the actual practice of your chosen profession. Your presence here with the intention severally to devote your lives to the

practice of the Medical profession, sufficiently attests your appreciation of the importance of proficiency, and the value to community of the science which you have espoused. It would, then, be almost an insult to you to present on this occasion the benefits which our noble profession has heretofore, and still continues to confer upon mankind, though I regret to say that frequently the individuals benefited by their labors are so unappreciative as not to recognize the man of scientific acquirements, profound investigation and solid attainment, from the miserable empiric whose foul advertisements taint the atmosphere and corrupt the moral sense of intelligent communities. But so it must ever be, so long as vice and immorality exist in our large cities and superficiality in the intellectual training of our youth, so long also as wealth is to be considered the first object to be obtained, and so long as vice is winked at and even apologized for in public society.

True science can only flourish and receive its proper appreciation when society is itself intelligent, and its morals pure. In the foul and pestilential atmosphere of a polluted and crowded population, all kinds of vermin and parasites find the proper conditions for their developement, existence and reproduction, and all precautions which may be taken to prevent contagion will fail, unless the atmosphere is purified and the conditions changed. Hence it is that Quackery, from the most infinitesimal to the most magnificent of its various forms, finds its home in large cities, where there exists the most perverted ideas of morals and the grossest exhibitions of vice. Under such conditions it is curious to observe that the public press, which professes to be, and should be, the censor of the morals of community, lends itself to the diffusion and perpetuation of these swindles on the masses. But still more to be reprobated and regretted, members of other liberal professions, (there are, I am happy to say, most honorable exceptions,) ignorantly, but no less injuriously, lend themselves by certificates to quack advertisements and recommendations of

nostrums, to perpetuate and encourage the inherent tendency of the masses to accept empirical systems and employ empirical practitioners. But enough of this, the foe, if foe it be, is not worthy of our fire, except to protect the ignorant. Our ammunition is wasted, if we contend with these excrescences on society. Guerillas should be hung, not shot. So long as there are fools there will be quacks; the millenium is not yet.

Now, if your desire is to be and become learned and honorable members of the medical profession, a course of study is to be pursued which should be well laid out, your plans drawn and your determination fixed to follow that plan to its consummation. And in this regard, I have first to say that a preliminary education is of the first and highest importance to every student, not only of our own but of any liberal profession. As regards the amount of previous education required to enable the student to master the profession of medicine, authorities and the committees of conventions and associations differ, but all agree that a good grounding in all the branches of an ordinary English education is absolutely necessary to success, and that some knowledge of the Ancient Latin and Greek languages, materially facilitate the acquisition of the principles of our profession. Excepting in unusual instances where genius has overridden the rules which govern the general proposition; the cases are rare in which high position has been attained without preliminary education.

Permit me then, gentlemen, to exhort you that, if you feel the want of previous education, you will endeavor, without delay to repair your deficiency; with industry, it may be done while still pursuing your course of studies, delaying somewhat, perhaps, your reception of your diploma, but, if effected, on entering the ranks of the profession at the completion of your course of studies, it will be with advantages which tenfold repay you for the delay. I have been incited to make these remarks because of the fact that there is a disposition, stronger perhaps, in the West than in the older and more developed portions of our country, an almost unconquerable disposition, in

young men especially, to push forward to the goal they have set before them, and that with insufficient training before entering the arena. In the Olympic games of ancient Greece severe training was submitted to before the contest was accepted, or the contestants permitted to enter the course. This haste, except in extraordinary cases where genius surmounts all precedents, is not only injudicious, but almost invariably condemns a man, whatever his industry, to simple mediocrity for a long period of his early professional life, and unless he has a powerful will, strong hope and unflagging industry, he is apt to despair of success, while inferior minds, with the advantage of a good preliminary education, will distance him in the race.

The most important step in your advance to professional attainments is this: That you become thoroughly grounded in the rudimentary branches of the profession. First in order of importance, perhaps, comes Anatomy — the science which teaches the structure of the human frame, that most perfect of all machines which God himself has yet constructed, wonderful in the beauty of its proportions; wonderful in its adaptation to the varied uses demanded of its several parts; wonderful in its power of self-repair; wonderful in its resistance against abuse of natural laws; wonderful that it can, in exceptional cases, exist a hundred years, resisting all diseases, all climates, and all conditions of life; still more wonderful in its connection with and dependence upon that invisible essence, the soul of man, which controls, modifies, regulates, or abuses this most wonderful of all machines.

Should the superintendent of any of our railroad companies employ, to take charge of and manage a locomotive engine, a man who was not fully and perfectly conversant with all its parts, the object of each and every part, the mode and manner in which the vital energy of heat converting water into steam acts upon and through each valve, on every lever, on every crank, and on every wheel, he would be thought derelict of duty, and held responsible by an indignant community, for the loss of life and property consequent upon the ignorance of his

employee. Yet, forsooth, any ignoramus who, by flaming advertisements, and fulsome self-adulation, obtrudes himself upon public notice, will find fools who will trust that most perfect, most intricate and delicate piece of workmanship to the hands of a man, or rather a madman, who never saw the interior of the machine, has no knowledge of its mode of working, does not know where are its valves, or what the power, or how it propels its separate parts—in a word, is as totally ignorant as a child unborn of the subject he is acting on, or the means he is using to remedy its aberrations,

Suppose, gentlemen, that either of you had a valuable watch, perhaps an heirloom in your family. It has become deranged in its movements; it is not reliable in recording the hour; what would you do? Would you go to a blacksmith to have it repaired? or to a scissors-grinder? No, you would say—this man may be expert to shoe my horse, but he may not touch my watch. And why? Because he does not understand its anatomy and physiology. You would even hesitate to employ a watch-makeor until you were certified by indisputable references that he understood thoroughly its mechanism, and how to remedy the derangement of your treasure.

Yet, strange as it may seem, there still exists in this nineteenth century, men who profess to practice upon the intricate mechanism of the human body, who have never seen and who have not the slightest knowledge of its interior structure. Truly it has been said that it is strange that "a harp of a thousand strings should stay in tune so long."

The science of Anatomy stands, as I have said, at the foundation of medical science. It is the corner-stone, and upon its faithful acquirement depends the whole success of the future candidate for professional honors. Having become proficient in this branch of the profession, the department of Physiology next claims your attention. It will teach you the mode of operation of the vital forces, which act upon and keep in constant motion this intricate machine.

The study of Pathology will instruct you in the aberrations in the movements, and the changes of structure which result from disease. Therapeutics, Materia Medica and Chemistry, will supply you with a knowledge of the mode of action, and the materials with which to remedy such aberrations. Surgery supplies and directs the application of the instruments in the treatment of those cases and conditions in which the more subtle remedies of the Pharmacopœia fail to relieve, which for the most part are injuries which occur from the applications of external force, or from hidden causes which produce abnormal growths and excrescenses. Obstetrics will inform you of the laws of birth and generation—the starting point of human existence—and the management of delivery, or the ushering of this fleeting body into this fleeting world.

The practice of Medicine is the department which instructs you how to diagnose disease, to recognize the existence of various pathological changes, and suggests the remedies to be applied, which are furnished by the Pharmaceutist. With all and each of these branches must you become familiar before you can enter even the threshold of the Medical Profession.

Now, gentlemen, with this curriculum laid out before you, you must perceive that the term allowed for the existence of any individual is too short to permit the acquisition of a perfect knowledge of every branch of this vast field of study. In the older and more developed countries of Europe, the subdivision of labor and of studies has come to be recognized as the main condition essential to success. In this country, where society may be said to be yet in a transition state from the more primitive to the most cultivated, the subdivision of studies, so far as the liberal professions are concerned is yet looked upon with jealous eyes, and the man who dares to announce that he has devoted his time, his labor, and his life, to the special cultivation of a particular department of Medical Science, is by many, not only of the uninformed, but by men of standing in the profession itself, characterized as approaching, if not actually having arrived at, the position o

an Empiric. Never was there a greater mistake. There is an ancient proverb which says, "Beware of the man of one book," which strictly applies to the matter of specialities in the medical profession.

If it be true that no one can perfect himself in all, why should he not in one branch of study? Instead of a feeble incompetency, he could offer himself as a competent servitor to the public in the matter of his specialty. For one I advise that you select for yourselves, as soon in your course as practicable, a particular branch of medical study to which, after the due acquirement of the rudimentary branches, you propose to devote yourself. Having made your selection, let your course of studies thereafter, while not neglecting others, tend specially to that branch which you may have selected as your speciality. You will thus probably, if you have ordinary ability, attain eminence when otherwise you would be obliged, by diluting your efforts in the attempt to turn your attention into too many channels, fall into a meagre mediocrity.

I have endeavored, gentlemen, to give you a simple outline of the course of studies you are about to adopt, and briefly to indicate to you your duty to yourself and the profession.

Take as your maxim the ancient aphorism, "*Ars longa vita brevis est*"—Art is long and life is fleeting. Remember that no one mind can comprehend or bring into useful application all of science. That in the study of Medicine you have, as were, three separate problems to solve—Life, Disease, Death. Your object is to preserve Life, to prevent or cure Disease, and to prevent death. This is the task, and these the problems you have to solve as Students of the Medical Profession. Are you prepared, and will you submit to the labor necessary to render yourselves competent to perform these duties? are the questions that I leave for your own consideration.

THE PREVENTION OF EPIDEMIC CHOLERA.

By S. S. SALISBURY, M. D., of Tolono, Ills.

Epidemic Cholera, being again prevalent, and there being as yet no means of prevention known: I will submit the following facts for the consideration of the medical public.

It is an established fact, that Arsenic, if given in small and repeated doses, may have its poisonous operation averted by keeping the kidneys in active operation at the same time. The close resemblance between the action of arsenic and antimony, and the poison that produces epidemic cholera, leads me to the conclusion that the poison that produces epidemic cholera, must be a material substance, and that its poisonous operation may be averted in the same way.

The poison that produces this disease must necessarily enter the system gradually, whether it be absorbed by the lungs, the skin, or swallowed in the saliva, and at the same time it is gradually passing out of the system by the excretory organs, enabling them to carry off a larger quantity of the poison, and thereby prevent an accumulation of it in the system sufficient to develop the disease, or at least by this means mitigate its violence.

The operation of diluents in preventing strangury when cantharies is absorbed, is a fair example of the idea I wish to convey. In this case we merely, by adding to the quantity of water in the blood, cause the kidneys to excrete a larger quantity of water, which in its passage carries out with it the irritating substance, and prevents its accumulation in the blood.

We know that persons whose excreting organs, and particularly the kidneys, are impaired, which interferes with the proper performance of their function, are more susceptible to

the influence of poisons, and this class are more easily affected by cholera and all epidemic and infectious diseases. While on the other hand, those whose excretory organs are in active operation more effectually resist the action of these poisons, and this class of diseases. Although at each visit of cholera we see habitual drunkards and persons with broken down constitutions, that have the functions of their excretory organs impaired, fall thick enough, I think it would be a difficult matter to find a subject of diabetes that had been attacked with cholera.

Cider has been observed to be, to a certain extent, a preventive of epidemic cholera, by the English physicians. The same may be said of our own country. The great fruit country of East Tennessee and Southern Kentucky was affected lightly by the cholera during its last visit to this country, and it was observed by the common people that those who used cider constantly and freely, escaped. This article was manufactured abundantly there, and used as a common drink. That class of ripe fruits and vegetables, the use of which has been thought by some to prevent, rather than provoke an attack, will, on examination, be found to possess diuretic properties.

The following incident has come to my knowledge: During the last visit of epidemic cholera to this country, it prevailed in a small town in Kentucky, and eight or nine young men employed themselves in nursing the sick, and burying the dead; this was at a season when melons were abundant, of which these young men all ate freely the whole time, none of them suffered with any symptom of the disease, although a large proportion of the inhabitants were attacked.

The waters of some of the sulphur springs of this country have attained a degree of celebrity among the people living in their vicinity, for the prevention of cholera. Of these the spring at Delaware, Ohio, and some of the sulphur springs of Kentucky, may be mentioned particularly, and they contain Hydrosulphuric Acid Gas, and may be drank in large

quantities without inconvenience, and pass off as rapidly by the kidneys.

The exemption obtained by the use of these articles, has been attributed in one case to the presence of Acid in the blood, and in the other to the presence of Sulphur. They all, however, possess one common property—they are diuretic, either by direct action, or by the quantity taken.

I will suggest the constant use, during the prevalence of the epidemic, of dilutent diuretics, of that class that are neither emetic or cathartic, and of these Mineral (Carbonic Acid) Waters, Acetate of Potass largely diluted, or pure Cream Tartar, in small doses, might be found useful and agreeable. I think the conclusion is a fair one, that if this class of articles was used during the prevalence of the epidemic, it might either be prevented, or at least, its violence mitigated.

AN INTERESTING CASE OF HEMIPLEGIA.

By MORTON M. EATON, M. D., of Peroia, Ill.

Was called about two weeks since to see the daughter of Mr. M., of this city, aged 14 years.

Found her suffering from Hemiplegia. The left leg and arm were insensible to pain and motion extremely difficult, seemingly from want of power. The face wore a natural expression, the tongue inclined to the left side. The pulse was natural on the right side; the affected members were cold, while the other parts of the body were of a normal temperature. The tongue was clean; respiration natural.

My patient was able to converse readily, and from her and her mother I learned that she had never menstruated; that

this attack had been coming on for three days, beginning with numbness; that about two months before she had been troubled with a numbness in these members, and a pain in the back and thighs; that the bowels were regular; the appetite was impaired. I examined the spine carefully, but found no indications of any abnormal condition; the brain also seemed in healthy operation.

Having found no evidences of disease, and from the fact of her never having menstruated, I examined the hypogastric region and found much tenderness, and passing my finger between the labia and finding no hymen, I proceeded to pass my finger internally, which caused no pain till I came in contact with the os uteri, when I found that the womb was much inflamed, and extremely sensitive. This being the state of affairs, I determined to direct my attention mainly to this condition of the womb. I applied warm fomentations of hops over the hypogastric region, wrapped the affected limbs in flannel, and made the following prescription: ℞.—Pill Hydrarg. gr. x; Ferri Pulv. gr. v; Rhei Pulv. gr. x; Quin. Sul. gr. v; Strychnia Nit. grss.—M. Pill No. xv., div. S.—Take one three times a day.

Under this treatment she rapidly improved, the tenderness and congestion disappearing; the power of motion and feeling returned within a week, and the limbs have regained their natural temperature.

The case was new to me because of its occurring in the virgin. I have consulted those authors that were at hand, and I find no cases of this recorded, though Dr. Churchill, in treatise on Diseases of Women, page 732, states that "A nervous or hysterical paralysis may occur occasionally in the unimpregnated state."

Dr. Simpson says Albuminuria in the impregnated state sometimes gives rise to local paralysis, functional lesions, &c.

Dr. Romberg says, in his work published by the "Sydenham Society," that paralytic attacks, arising from morbid con-

ditions of the sexual system, through reflex influence upon the spinal cord, affect both sides.

I hope if other physicians have had similar cases, or can better explain the cause or the symptoms, than that the retention or non-appearance of the menses had caused an engorged and congested state of the uterus, and that this engorgement, by some means acting by means of reflex action on the spinal cord, caused the coldness, insensibility and loss of motion, we may hear their theory. I can see but one other way of explaining the case, that is, that we are aware that the suppression of the menstrual secretion frequently causes congestions of distant organs, and that possibly there was present a fullness of the spinal arterial twigs of sufficient magnitude to cause pressure on the side of the spinal cord. I shall recommend for the next too weeks, warm hip baths and the administration of small doses of Iron, Aloes and Myrrh, thinking that if the menstrual functions were fully established, she would have no return of these troubles, and fearing and expecting that if it is not established, that she may be attacked again as before in one or two months.

CLINICAL LECTURES ON DISEASES OF THE EYE.

By E. L. HOLMES, M. D., of Chicago,
Lecturer on Diseases of the Eye and Ear in Rush Medical College, and Surgeon to the Chicago Charitable Eye and Ear Infirmary.

CATARACT.

GENTLEMEN:

Cataract is an abnormal change in the form and character of the cell elements of the lens, producing opacity. Its chief symptoms are, the presence of a cloudy appearance either in

or behind the pupil, and a greater or less indistinctness of vision.

You will find no difficulty in the diagnosis of this disease, if you have formed the habit of examining carefully the eyes of different individuals in health, observing the appearance of the surface of the cornea and the condition of the pupil.

In the incipient stages of cataract, where there may be doubt, you can easily remove the doubt by dilating the pupil with atrophia, and throwing into it, by means of a concave reflector or a double convex lens, the concentrated light from a window, or better, the light of a candle in a darkened room. The strong light thus thrown upon any opaque substance that may exist behind or in the pupil, will so illuminate it, that it can readily be discovered on looking obliquely from different directions into the eye. In the absence of a mirror or lens, a small piece of looking glass may be used as just described, with advantage in the examination of cataract.

A little care will prevent you from confounding cataract with opacity of the cornea and save you the mortification of sending patients, with the latter disease, to some distant oculist for the removal of cataract, as has not unfrequently been done even by physicians of long experience.

A few words will suffice to explain the important points in the pathology of cataract. The lens, from abnormal nutrition, receives or loses undue proportions of certain elements. The solid or fluid materials may be in excess. The cells may contain too much fat or too much lime. Water may be absorbed in such quantities into the lens, as to disarrange and soften its cell structure. With fat globules there may be minute crystals of cholesterine, presenting a very beautiful appearance under the microscope. A peculiar form of "fatty degeneration" seems to occur as the principal feature in nearly all cataracts.

It should be remembered that the capsule resists to a remarkable degree all tendencies of abnormal conditions of the eye to render its tissue opaque. While the substance itself of both

the cortical portion and kernel of the lens may be so changed in character, that they become opaque, the capsule, except in rare instances, retains its perfect normal structure, any apparent opacity being caused by the deposit of cells upon its surface. A comparison in this respect might be made between the capsule and lens, in abnormal conditions of the eye, producing cataract, and a thin plate of fine glass becoming apparently opaque on exposure to the influences of moisture and dust.

Iritis and penetrating ulcers of the cornea often produce a deposit of opaque lymph upon the anterior surface of the capsule. Chronic choroiditis is very liable to so disturb the nutrition of the lens as to render it opaque. Concussions often produce cataract. In such cases the cataract often seems to depend upon a rupture to a greater or less extent of the zonula of zinn.

Punctures of the lens are a frequent cause of cataract by permitting an undue imbibition of aqueous humor.

The causes of idiopathic cataract are very obscure. Advanced age and infancy seem especially liable to it. While I have generally found aged cataract patients in good health, I have observed that infants with congenital cataract almost always present signs of arrested development. Diabetes and long use of rye bread impregnated with ergot, are said to induce cataract. It is sometimes hereditary.

The disease may extend through the whole substance of the lens and over the whole surface of the capsule, or it may be confined to a very small central kernel; to one delicate lamina of the lens, or even to a small disk in one of its layers.

Cataracts are usually classified as cortical, central or capsular, referring to the portion affected—and hard or soft, according to the degree of induration.

You have had opportunities of examining nearly every form of cataract at the clinic.

By calling to mind these cases you will now better comprehend their nature. In the case of the young child with *congenital cataract*, the lens really resembled a transparent sack

filled with milk. On puncturing the lens with the needle, the anterior chamber became filled with white fluid, in which was floating minute cloudy flakes. The lens had, as it were, become fluid. In the boy from whom I extracted the two cataracts through linear incisions in the cornæ, the whole of each lens was slightly opaque, with a small central portion almost perfectly white, both portions being soft.

In the case of the old lady, whom a few of you saw recently, the cataract was peculiar. You remember that when the pupil was dilated, the whole pupillary disk presented an almost uniform thick cloudy appearance. Whenever the patient turned her head from one side to the other, a small yellow body was observed to be in different positions against the anterior part of the capsule. As the cataract passed through the cornea with the capsule unruptured, it was found that the capsule was filled with a thin milky fluid, surrounding a small but very hard central kernel of the lens.

In one case the cataract had become liquefied, and finally absorbed, leaving the anterior and posterior halves of the capsule floating in close union with each other behind the pupil.

Less frequently in fluid cataracts the oil globules are found deposited in such quantities, that they unite in one large drop and float upon the other fluid.

The so-called black cataract is produced by the exudation of blood in the anterior chamber, the coloring matter of which becomes infiltrated through the capsule into the superficial layers of the lens.

Calcareous deposits in the lens sometimes depend upon chronic inflammation of the choroid and iris, as seemed to be the case in the boy, upon whom I performed Iridectomy with extraction of the peculiar chalky cataract.

From these and other examples of cataract which you have examined, you are able to understand readily nearly every case you may hereafter meet. The abnormal processes which

produce cataracts are nearly identical in all cases; different varieties being but modifications of the same disease.

The differential diagnosis of the varieties of cataract is usually without difficulty, although, there may be occasional uncertainty regarding hard and soft cataract.

It is well to remember that before the age of thirty, cataracts are generally soft; in advanced age, hard. The presence of a central yellow-colored portion is often indicative of hard cataract. Soft cataracts are generally more rapid in their development than hard.

Nearly all hard cataracts are surrounded by soft cortical substance, resembling boiled starch.

Cataract may be complicated with amaurotic disease of the choroid, retina and optic nerve. Whenever the pupil is inactive under the influence of alternate light and shade, or dilates very slowly and imperfectly, from the use of atropia, and when a patient cannot see the light of a candle at night at the distance of fifteen feet, there is reason to fear that the removal of the cataract would not restore good vision.

Medical treatment of cataract is almost absolutely without benefit. Surgical interference is the only reliable means of relief. This usually consists in the use of the needle or of the knife. By the former instrument, the opaque lens is either depressed below the pupil behind the iris, or broken up and left in the eye to be absorbed. By the latter an incision is made in the cornea, through which the cataract is removed in substance.

For the discussion of the question whether to operate, when only one eye is affected, whether to operate upon both eyes at one time, and for the details of each mode of operating with the accidents, which are liable to occur, I must refer you to the common text books on diseases of the eye.

The following facts, however, I wish especially to impress upon you: that the passage of a large hard cataract through the pupil is liable to so bruise the iris as inevitably to produce iritis; this disease is often caused by fragments of the cortical

substance resting in contact with the iris. To overcome these evils, it has been proposed, first to remove a portion of the iris as in iridectomy. If the extraction be performed some weeks after this preliminary operation, the lens not only passes through the pupil with less danger to the iris, but all the cortical substance is more readily removed. This mode of operating appears to be regarded with more and more favor by oculists in all cases of cataract in adults, whether hard or soft. In infancy there is less reason for iridectomy as a preparatory operation, since the iris is much less susceptible than in adults to the presence of portions of the lens lying in contact with it.

The disadvantages arising from the disfigured and enlarged pupils, occasioned by this mode of operating, are perhaps more than compensated by the increased chances of a favorable result.

I would urge upon you the careful perusal of all articles upon this subject you may meet.

SELECTED.

LECTURE ON THE IMPORTANCE OT THE APPLICATION OF PHYSIOLOGY TO THE PRACTICE OF MEDICINE AND SURGERY.

By E. BROWN-SEQUARD, M. D.

This extremely interesting lecture was delivered before the Medical Society of the College of Physicians of Dublin. The aim of the author is to show that by the knowledge derived from experiments on animals, as well as that derived from other physiological researches, from the knowledge we derive from microscopic anatomy, and even from simple descriptive

anatomy—especially as regards the base of the brain—combined with the careful study of pathological cases at the bedside, may be drawn a great many conclusions of importance to the practice of medicine, and we may be led to form a sure diagnosis in many otherwise obscure cases.

The lecture is so condensed that it is impossible to do justice to it by any abstract; and the subject is so interesting, and is treated in so masterly a manner, that our readers will be pleased to have laid before them the main portion of the text.

The author observes: "A complete revolution has been made in the practice of medicine within the present century by the study of experimental facts observed upon living animals; and if, together with this source of knowledge and that which springs from the comparison of those facts with morbid cases in our own species, we make an appeal to the other branches of physiology and also to normal anatomy, especially that of the nervous centres and of the nerves at the base of the brain, we shall find that to understand the symptoms of a large class of pathological cases in our own species becomes almost as easy as to read the alphabet. In fact, many of the most complicated, the most obscure, and the most unintelligible cases of nervous disease are as easily understood as the simplest case of bronchitis, or any other simple affection of the lungs, the bowels, &c., if we have the advantage of the light which experimental physiology and the anatomy of the base of the brain now afford.

"Suppose, for instance, a patient comes to us suffering from paralysis, an absolutely complete paralysis of the motion of one-half—say the right half—of the body, from the neck downwards. Suppose that, in addition to this paralysis of motion, he has also, on the same side, extreme hyperæsthesia or increase of sensibility in all those parts which are struck with the paralysis of motion. Suppose that we find not only extreme sensibility to touch—a symptom which we may measure accurately with a pair of compasses or the æsthesiometer—but also an extreme sensitiveness to tickling—a sensibility, by the way, quite distinct from the other. Let us suppose that we find, besides all this, that the sensibility to a prick or a pinch—in fact the sensibility to painful impressions of every kind—likewise the sensitiveness to changes of temperature—cold and heat—is also much increased. Thus you have these four species of sensibility—each of which—I repeat, is entirely distinct from the others—all greatly increased in that limb,

which, at the same time, is apparently dead, inasmuch as it does not possess the least power of motion. Suppose further, that in the limbs and part of the trunk in that same side of the body the temperature is found greatly increased, that the circulation of the blood in that side is more energetic, the arteries being *fuller;* or, in other words, that there is decidedly more blood there than elsewhere in the body.

"All these symptoms, observe, belong to one side of the body—*the right.* If, now, we compare them with what we find on the opposite side, they acquire still greater interest. On examining the *left* side of the body, we find an absolutely reverse condition. We find that all the four species of sensibility of which I have spoken are lost—absolutely gone—on that left side. We find that there is, on that last side, (in opposition to the state which exists on the right side,) a complete power of motion, not the slightest diminution of the power of the will.

"Suppose we go further, and inquire into the condition of the *fifth* kind of sensibility (assuming that their number is only five); if we look for the special sensibility existing in the *muscles*, that sensibility which serves to the direction of our movements, we find that this peculiar sensibility remains perfect in the limbs of that left side, and that the motions of weight, of resistence, &c., derived from the muscular sense, also remain perfect in those otherwise anæsthetic parts. There is, therefore, on the *left* side a complete anæsthesia of the four first kinds of sensibility of which I have spoken, notwithstanding the persistence of the muscular sense; while on the *right* side the condition is exactly the reverse—the muscular sense is gone, and the other four species of sensibility exist in a greatly increased degree.

"But what about the degree of heat in the limbs of the left side, and what of the circulation? Here, too, the condition of things is reversed; for on the left side there is not only a degree of heat much inferior to that on the right side of the body, but there is also an actual diminution of heat if you compare the state of those parts with their normal condition; in other words, there is an *absolute* not simply a *relative* diminution of heat on the left side. Thus, on the right side, the temperature of the body has increased, while on the left it has diminished. The case is similar as regards the circulation, which is less full in the left side than in a normal state.

"These features, I think you will agree with me in saying, are striking enough; yet there will be many others in the

same individual, upon which I cannot now dwell, but which are fully as interesting and equally difficult of explanation by the practitioner who is not perfectly *au courant* with the present state of physiological science.

"In *the face* (for example), on the side of the injury (admitting that an injury is the cause of these symptoms), there will be an increase of heat, an increase of sensibility, a contraction of the pupil, and a degree of occlusion of the eyelids; so that the eyes of the patient—if you look at them at the same time while open—are quite different one from the other. The eye on the side of the increased heat and hyperæsthesia seems smaller, because the opening of the eyelids is smaller than on the other side.

"All these effects we can produce in animals very easily: and it has been (in some respects) my good fortune to find a number of such cases in our own species. One of the most striking of them I saw at the London Hospital, in company with my dear and talented friend, Dr. Robert M'Donnell; in that case the various symptoms which I have described were as marved as possible.

"Now, what was the injury which produced all these remarkable effects? It was simply this—a complete transversal division of the right lateral half of the spinal cord in the neck; not simply a part, but, I repeat, the entire lateral half, *i. e.*, the posterior column, the lateral column, the anterior column, and the gray matter of that side had been divided transversely and completely. Owing to that injury all those symptoms existed.

"Now, I ask you, if any physician at the beginning of this century—not having the light afforded by the present state of physiological science, no matter how learned and able in other respects—had such a good living problem been presented to him, would have been able to understand such a case? Decidedly not. Nay, more, he would, in all probability, not have seen the case as I have described it. He would not have recognized the existence of some of the symptoms. He would likely have fallen into the same error as was committed by the great French Surgeon, Boyer, who had such a case, bvt who never found that tha sensibility was lost on the side still under the power of the will, until the nurse, who discovered the fact by a mere chance, told him of it.

"From such facts you will see the great importance of a thorough knowledge of physiology. The physiologist can have no difficulty in understanding such a case, for when he

knows that the spinal cord is the organ conveying the orders of the will to the muscles—that the nerve-fibres, serving for voluntary movement, proceed along the spinal cord, so that those which serve for the movement of the limbs on the right side of the body pass along the right side of the cord, while those serving for movement of the limbs on the *left* side of the body pass along the *left* side of the cord; it is quite evident to him that such a division of the cord as I have described will cause loss of motion on one side and not upon the the other. Again, the sensitive nerve-fibres which serve to the four first kinds of sensibility of which I have spoken, proceed in the spinal cord in such a manner as to go into the *opposite* side of that organ from that side of the body from which they convey the sensitive impressions—so that the nerve fibres of sensibility in my right arm and right leg, for instance, pass into the left side of my spinal cord, and *vice versa*. Hence a division of the cord produces loss of sensibility on the side of the body opposite to that of the injury.

"Equally simple is the explanation of the increase of heat in the limbs on the side of the injury. The nerves of bloodvessels pass into the spinal cord on the side corresponding to that of the limbs into which they go, just as it is the case for the nerves of voluntary movement, so that a division of the spinal cord on the right side produces paralysis of the nerves of bloodvessels in the right side of the body, in consequence of which, the impulse of the heart being less resisted on that side than on the other, there is a great afflux of blood, and also, as an effect of this increased quantity of blood, an increased quantity of blood, an increased heat, and (as a consequence of both the increased heat and the augmented quantity of blood) in a measure, also the increased sensibility of which I have spoken—the hyperæsthesia of the four kinds of sensibility.

"I cannot further dwell on this class of cases. Sufficient has been said, I hope, to show how important the light physiology can throw on symptoms which certainly would have been most obscure (to say the least) to even the most eminent and learned men of the beginning of this century, who did not know the physiological facts which have since been discovered.

"I will now produce another case. Let us suppose a man has sustained an injury, not of the half of the spinal cord, but an injury of one-half of the medulla oblongata at the level of the decussation of the anterior pyramids; not such

an injury as would destroy life at once, but an injury, a tumor, or a morbid alteration of sufficient extent to produce decided symptoms. In this case you would have all the symptoms which I have described in the former case, but with this difference, that as the anterior pyramids decussate there, an injury on the right half of the medulla oblongata would strike the fibres of voluntary movement belonging to that side previous to their making their decussation, or, in other words, before they pass from the right side into the left side; and it would also strike these fibres of voluntary movement that have come from the left side and have already made their decussation. In this case, therefore, there would be paralysis of motion on *both* sides of the body, while, as regards the state of the bloodvessels, the hyperæsthesia of the various kinds of sensibility, everything would be the same as in the former case.

"Let us take, now, a case of injury a little higher up, and we shall find other striking differences.

"A patient, I suppose, comes to you with paralysis of the external rectus on the eye of the right side. The face is also paralyzed on the same side. There is, besides, anæsthesia of the face on that side; while the left side of the body is affected with paralysis both of sensibility and motion. Here there is a case absolutely distinct from both the others. I cannot dwell, at length, on the remaining symptoms of the case, but I must not pass from it without noticing one striking feature. You will often find, in such cases, that the tongue of the patient is perfectly free; there is no loss of movement at all in that organ, and there is no impediment of speech. You will find shat the facial paralysis is of exactly the same kind as that which takes place when the facial nerve, outside of the cranium, has been injured—*i. e.*, the muscles which communicate expression to the face and the orbicularis palpebræ are paralyzed. This case, therefore, is quite distinct from cases of hemiplegia arising from disease of the brain. As you are aware, in cases of paralysis arising from injury to the brain, the paralysis of the face is on the same side with that of the body, and the orbicularis is not paralyzed, while the tongue is almost always somewhat paralyzed. In the case I am now speaking of, the distinction is striking. The drawing of the face on one side, owing to the paralysis of the other side, takes place on the side of the paralysis of the body instead of on the other side—because the paralyzed side of the face is the opposite to that which is usually paralyzed. Besides all this

you will find that the sense of taste is altered in a good part of the tongue, on the side at which the face is anæsthetic. You will find further that the patient is in a state of considerable emotion—he will shed tears and cry easily; he will gape frequently, and while gaping there will frequently be a sudden jerk of the paralyzed limbs. There is also, generally, considerable giddiness and tendency to vomit. I am now mentioning only the principal symptoms.

"Now, I ask, what is the explanation of this case? Do you think that the most eminent men of the beginning of this century, not knowing the sciences of physiology and anatomy as we now know them, could have understood this case? Certainly not; and thus, you perceive, an acquaintance with physiology and anatomy is an immense help in the diagnosis of disease.

"The series of symptoms I have last described belong to a case of injury of the *pons Varolii*, striking, at the same time, one side of the trigeminal and of the facial nerves before they have made their decussation, which is at the lower part of the pons Varolii, and striking, also, one side of the sixth pair of nerves before it has made its decussation with its fellow of the other side, thus producing paralysis on the side of the injury just as if the injury existed in the nerve itself. You must not, however, suppose that an alteration of the pons Varolii will, under all circumstances, produce these effects. If the injury takes place a little higher up than the lower part of the organ, striking at the place where the facial nerve and part of the trigeminal nerve make their crossing, you will have these results; both sides of the face will be paralyzed, as regards sensibility and motion, together with the action of the external recti of the eye, and also the sense of taste in the anterior part of the tongue, while the paralysis of sensibility and motion in the body will be only on one side. In order to understand this it is quite sufficient to keep in view what the nerves of the face do when they reach the pons Varolii. When the injury strikes that nervous centre above the decussation, you will have, so far as regards the portions of the face and body which are paralyzed, the same effects as are observable in most cases of brain disease, viz., the paralysis of the face will be on the same side with the paralysis of the body. If, on the other hand, as already stated, the injury strikes the pons Varolii below the decussation, the opposite effects are produced.

"The question arises, therefore, how can you know whe-

ther the seat of the disease is in the pons Varolii if you have not that peculiar symptom of the difference of the sides, as regards the paralysis of the face and that of the body? There are several peculiar features, which I cannot dwell upon, which will answer that question. In the first place, if the injury is in the pons Varolii, you will find in the beginning of the affection one most important symptom, viz., extreme coldness of that side of the body which is to become paralyzed after a time, just the reverse of what will occur when the paralysis is complete, owing to a spasmodic contraction of bloodvessels preceding their paralysis and dilatation.

"I remember on one occasion, after one of my lectures at the Royal College of Surgeons in London, that eminent physician, Dr. T. Addison (whose modesty, like that of almost all truly great men, was in proportion to his great talents and extensive learning), did me the great honor of asking my opinion upon a case in which the symptoms were, besides the extreme coldness, already mentioned, in one half of the body, some tingling in the fingers, a very slight ptosis of the external rectus, some jerks in the external muscles of the face, on the side opposite to that of the injury (this is a symptom you do not find when the injury is higher up than the pons Varolii), also some sensations of tickling in the face (another symptom you do not find in cases where the injury is higher up than the pons); in fact the symptoms were such that although, as observed in the human species, they were new to me, who was at that time more of a physiologist than a practitioner, I had no hesitation, simply from the teachings of physiology, in pronouncing the case to be one of disease of the pons Varolii; and so it proved, as it gradually and successively presented all the symptoms which I have mentioned as characteristic of disease of that organ. As I had not, however, the advantage of making an autopsy of the case, you might think me very presumptuous in holding that I had made a certain diagnosis; but really with this class doubt is impossible, when the symptoms are combined, forming a group so definite and distinct that there is absolute certainty, even during life, as to their cause. It is not so when the disease goes higher up in the brain; we are then often at a loss, and it is extremely difficult to say, even, whether there is organic disease or mere temporary disorder of the circulation, and still less is it possible to say what part of the brain is the seat of the disease.

"I pass on to the consideration of another kind of hemiplegia. There is one kind of that paralysis perfectly distinct from all those which I have mentioned. We will suppose a patient comes to you with some slight stiffness and tendency to throw his limbs in a wrong way when he walks. There is not a very great paralysis, but rather a decided weakness, and hardly any loss of sensibility on one side of the body. He complains also of noises in the ear on that side, of feeling extremely giddy, and of having sometimes a tendency to turn round upon himself, like a top. Sometimes he reels as if he were intoxicated. He very frequently finds it impossible to walk straight forward. Sometimes, also, he has very great hyperæsthesia to sounds; at times, also, he has a sudden tendency to fall down—it seems to him as if he cannot keep up, and that he must fall; also, that if he takes hold of something he will keep up.

"This class of cases is, indeed, one of the most instructive of all kinds of hemiplegia. I have now collected more than twenty-two such cases—not all seen by me. According to the autopsy which has been made in a number of these cases, they are simply instances of reflex paralysis, not paralysis arising from the alteration or destruction, or, in fact, from any interruption of the conductors of voluntary motion—the paralysis in these cases is due to quite another cause. In this class of paralysis there is disease either of the petrous bone or of the base of the brain near the origin of the fifth pair of nerves, or near the place of entrance of the auditory nerve. There is, in this case, not a destruction but an irritation by a pressure (and not a very considerable pressure) on the crus cerebelli, or a small part of the pons Varolii, or the medulla oblongata. Place a tumor there which has encroached slightly and gradually on the parts of the base of the brain I have named, and the symptoms I have mentioned will appear. But let the injury go further, and the paralysis on one side of the body, viz., the side where the injury exists, will disappear; and yet the injury to the brain is greater now than it was before. From the moment that a real disorganization has taken place in the base of the brain the symptoms which existed at first disappear, and the paralysis passes from the right side of the body to the left side—the tumor being at the right side.

"I regret that I cannot, owing to the limited time at my command, explain the causes of this at length; but I shall endeavor to do so in a few words. At first, in a case of the kind I speak of, there is an irritation starting from the injured part

or parts, acting in the same way to produce a paralysis or an irritation from a nerve in any part of the body which causes a reflex paralysis. Acting upon the brain, it produces, by a reflex influence, an alteration of some kind which the microscope has, as yet, been unable to detect, and owing to which is due a paralysis. But why is it that, if the disease at the base of the brain progresses, the paralysis disappears on the side first affected and appears on the opposite side? The explanation is this: The part which, in the first place, was irritated, has now been destroyed altogether; there is no more irritation, and the paralysis consequently ceases on that side, but it passes to the other side of the body, because in the pons Varolii and medulla oblongata there are conductors of voluntary motion passing above their decussation to go up to the brain; and hence, if an injury takes place such as to destroy some of these conductors, there will be paralysis on the opposite side of the body.

"I intended bringing forward several other types of hemiplegia to show the great assistance physiology affords in explanation of such cases, but I am compelled to be brief. I must, however, mention one other species of hemiplegia—that due to hemorrhage in the cerebellum. In this case there are features which lead to accurate diagnosis; and many of these features have been discovered by experiments upon animals. One of these symptoms is vomiting; this is a constant feature of hemorrhage in the cerebellum. There may be also hyperæsthesia in some parts of the body—not the whole body, or even half, but in some portions. There will often likewise be amaurosis; this is generally due, not to pressure on the tubercula quadrigemina, as has been stated, but to a reflex action, as in the majority of cases there is no pressure whatever upon the tubercula quadrigemina. That it is due to a reflex action appears still more clearly when we consider what occurs in many of these cases; we may find the amaurosis existing in the left eye alone, in the right eye alone, or in both eyes—nay, more, we may find amaurosis passing alternately from one eye to the other in the same patient, although in all those cases the disease is only in one-half of the cerebellum, showing, in fact, that there is no persistency or uniformity of action in the production of amaurosis in these cases; or, in other words, that there is the variety we know to exist in effects due to a reflex influence.

"There is another kind of hemiplegia as to which I must say a few words—I mean that which is due to a lesion of the

anterior lobes of the brain. Phrenologists, you know, have regarded the anterior lobes as the organs of speech; but there have been many instances—Dr. Stokes mentioned a very remarkable one to me a few days ago—in which there has been destruction of these parts without any deprivation of speech. But the question remains (and it is an interesting one), what occasions the loss of speech when such loss takes place? As regards this question I shall, in a moment or two, have to point out how great a variety of symptoms may be produced by a lesion of almost every part of the brain. The depriva tion of speech I hold to be a reflex phenomenon; and that it is so, we have almost a proof in the fact that it often varies very much in the same patient, according to circumstances which physiology has, as yet, been unable to detect, but certainly with the lesion of the brain still continuing unaltered. It is worthy of remark, too, that the loss of speech is usually unaccompanied by any loss of movement in the tongue; there may be perfect freedom of motion in the tongue, and the deprivation of speech arises from the circumstance of the patient being *unable to give expression to his thoughts;* and this inability extends not merely to speech, he is equally powerless to express ideas either by signs or by writing. The paralysis, in fact, is a 'paralysis of the organ of expression of ideas;' and it is remarkable that this occurs, while the individual may remain, in other respects, in full possession of his intellectual faculties, at least so far as we can judge of this possession. One of the cases of that kind I have seen was that of a clergyman, a man of remarkable intelligence. He had not lost the mechanical part of the power of speech, for he articulated a few words very distinctly—but they were sounds devoid of meaning; he was equally unable to express his thoughts by writing, or even by signs. Even when he was told to express 'yes' by lifting up one finger, and 'no' by lifting up two fingers, he was unable to do it, and showed signs of great distress at his inability; and all this, although he appeared, in other respects, very intelligent.

"I pass on to notice another form of disease showing the importance of a knowledge of physiology. It is a form to the discovery of which I have been partly led by experiments on animals. A patient may come to you complaining of pain in the back, of a pricking sensation in both arms, with some degree of itching, burning, or some subjective sensation of alternate cold and heat, or some curious variety of cutaneous eruption, differing from those you have usually to deal with when

they are not due to nervous disease. You may find, also, some weakness or even a great paralysis in the two upper limbs; jerkings in those limbs, likewise a stiffness in some of the muscles, and tenderness under pressure. If you do not know the physiological meaning of all these symptoms, you will be led to suppose that there is some local affection—rheumatism, perhaps, of both the arms. You will think it very strange that you can find no description of any such disease in books—yet the explanation of all these phenomena, when read by the light of physiology, is very simple. The symptoms depend altogether on an inflammation of the nerves of the arms at or before their exit from the spine in the lower cervical region and the upper dorsal region. The neuritis is usually accompanied by a local spinal meningitis; all the symptoms arise from irritation of the motor and sensitive nerves, and also of the nerves of bloodvessels. If, then, you meet such a case as I have described, and applying your physiological knowledge you arrive at the true character of the injury, you may, by adopting a certain course of treatment, cure, or, at all events, greatly mitigate the disease. I have met many cases of the kind; and, with the exception of one, which I saw in consultation with Mr. W. Adams, of North London, and which terminated in death, all the cases have been either cured completely or more or less ameliorated. The treatment consists in a most active blistering of the spine in the region of the disease; also, in the application of dry cupping. Injections of narcotics have also been resorted to; but I repeat that the principal part of the treatment consists in the repeated application of blisters to the spine. Internally I have also employed iodide of potassium; but what share it has had in the cure I do not know.

"I intended to have brought forward many varieties of cases of disease of the spinal cord, but time does not allow of my doing so. I will, however, say that physiology has demonstrated these most important facts—that the spinal cord, in its most central part, which is decidedly insensible and inexcitable in its normal state, may become exquisitively sensitive and excitable under the influence of inflammation or congestion, and that when the gray matter has become sensitive, it may occasion all those strange sensations and other symptoms complained of by patients attacked with either myelitis, or great congestion of the gray matter—viz., pricking as by pins and needles, formication, itching, feeling of heavy pressure, or tightness, coldness, or heat, &c., and jerks, trembling,

cramps, convulsions, contraction, &c. In cases of paraplegia this group of symptoms is generally due to a special alteration in the condition of the spinal cord, and the part of this group concerning sensation cannot be produced without congestion or inflammation, and characterize essentially these two diseases, especially the latter; and if you do not find them in cases of paraplegia, you may be convinced that the spinal cord is free from congestion, and still more free from inflammation.

"Keeping in view the object of this lecture, viz., the importance of a deep knowledge of physiology in the practice of medicine and surgery, I now proceed to notice the distinct and almost opposite features of two cases of fracture of the spine in the cervical region. Two patients, I suppose, are brought to you—each having sustained an injury of that portion of the spine, and having, in consequence, a complete paralysis of the trunk and limbs. One of them is almost pulseless, extremely cold, and covered with a clammy perspiration. He appears almost like a dead man; there is no contraction of the muscles, the limbs hang loose and dead, his breathing almost gone, his pulse—not only very faint, but extremely slow—from 40 to 45 in a minute. If you commit the fault of bleeding him, you find that the venous blood flows out red like arterial blood—flows out, not with a great impulse, for the heart is very weak and almost in a state of syncope, but still it flows out not like venous blood—it has an impulse like arterial blood.

"Now examine the other patient. In him the symptoms are almost the exact contrary to those in the former. The limbs are stiff and rigid; the pulse unnaturally high; the heart's action much excited; the heat of the body, not only higher than is usual in the limbs, but absolutely higher, and by many degrees, than the temperature of the blood in health in man. If you bleed him, which may prove useful, you find that the venous blood is darker than usual, and comes out without any trace of impulse.

"Now what is the explanation of these two cases? How is it that one of these patients is in a state of syncope, and the other in a state of asphyxia? It is found, by experiments performed upon animals, that in the former of these two cases the cause is an irritation—perhaps extremely slight, for the slightest prick may be sufficient—of the spinal cord, the effect of which is a stoppage of the heart's action, so that it beats with diminished force and rapidity, and as a consequence of this condition of the heart all the other symptoms above described ensue. In the other patient, on the contrary, the spi-

nal cord has actually been cut across altogether, and the patient is in a far *worse* state, in reality, though he *seems* to be far more alive than the other. He *seems* to have the power of reaction which we wish to find in patients, yet the danger of his state is far greater—in fact, he is sure to die, while the other, by means of an operation (trephining, or resection of the spine, an operation which was performed by Dr. R. M'Donnell, to-day, upon a patient in this city), may possibly survive.

"I proceed now to make some remarks on symptoms of brain disease. As you are aware, our view of the symptoms of disease of the brain proper—i. e., the cerebral lobes—is, that an injury there produces paralysis by striking the organ of the will, that there is a paralysis of the will at least for that part of the body which is paralyzed, and that if other symptoms occur, they are due also to a loss of function of the part altered in the brain, or to pressure upon neighboring parts. I have not time fully to demonstrate that the symptoms of brain disease are generally due to a reflex action, but I shall show (I hope satisfactorily) that the admitted view is absolutely untenable. You are all familiar with the great variety of symptoms presented in brain disease. Take, for instance, facial paralysis. In cases of disease of the brain, paralysis (as you know) does not exist in the orbicularis, but in the other muscles of the face. Now if it is alleged that when, in cases of disease of the anterior lobe of the brain, for instance, there is facial paralysis, it is because the nerve fibres of the facial nerve go to that part. I am perfectly willing to admit it; but let us take a case of injury to a different part of the brain—say, for instance, an injury in the posterior lobe—how will you explain facial paralysis in this case? Do the nerve fibres of the facial nerve go to the anterior lobe in one case, and to the posterior in the other? Surely not. In fact, the consequence of such a hypothesis would be that there is absolutely no part of the brain which would not be the spot to which the nerve fibres of the facial nerve go. If you can suppose such a hypothesis possible, I ask you to reconcile the facts with what anatomy teaches—viz.: that the facial nerve goes to a certain part of the pons Varolii, and no higher; so that besides the absurdity of supposing that the facial nerve goes to every part of the brain, and each part containing all these fibres, there is likewise the anatomical impossibility which arises when we examine the course of the facial nerve. Again, take another instance. The tongue, as you are aware, is in most of these

cases of disease of the cerebral lobes, more or less paralyzed; there is some difficulty in drawing it out in a straight line—also some slight impediment in the speech, owing to paralysis of some of the fibres of the ninth pair of nerves. How will you reconcile the existence of that paralysis in the majority of cases, with the fact that we do not see the fibres of the ninth pair—the hypoglossal nerves—going up higher than the medulla oblongata? Here is a patient who has a complete destruction of one-half of the pons Varolii; mark, that that organ must be the place of passage—if there is any such passage—of the fibres of the hypoglossal nerves going up to the brain. Therefore, when one-half of the pons is diseased, there must be a paralysis of the tongue; yet in most cases of disease of the pons there is no paralysis of the tongue, so that both anatomy and this clinical fact prove that the hypoglossal nerves do not go to the cerebral lobes. How, then, you will explain the fact that disease in any part of these lobes may (as we know, by experience, it does) produce paralysis of the hypoglossal pair of nerves, I leave you to decide. To me it seems clear, that to hold that when an injury to any portion of the cerebral lobes causes paralysis of the ninth pair, or of any other nerve, it is because the paralyzed nerves go to that part of the brain, is decidedly wrong. If you examine a number of cases of brain disease, especially of an acute character, such as cases of quickly enlarging tumors producing irritation, and especially tumors pressing on the dura mater, you will find that for a tumor in one and the same part of the brain there is, in some cases, no symptom at all produced, and in other cases you may find any symptom whatever. I do not think you could point out any feature of nervous complaint that you will not find existing in some one or other of the recorded cases of injury to, or disease of, any particular part of the brain. Nay more, even in one and the same individual, with one and the same persistent disease, you will often have a great change in the symptoms. He may be paralyzed today, another day he may not; you may, in fact, have every variety of phenomena, or no phenomenon at all, all arising from one and the same cause; so that unless you go the length of supposing that each individual part of the brain possesses every function whatever, and has the effect of acting on every part of the body in a direct way, you cannot explain these facts. Mark, that in some cases of injury to, or disease of, the cerebral lobes, there are no phenomena at all; so that, while on one hand, you are driven to suppose that there is no part

of the brain which does not contain all the nerves of the body, you are, on the other hand, forced to conclude that there is no part of any nerve of the body going to the cerebral lobes. Such a hypothesis is obviously impossible. I have time only to say that the explanation which I have ventured to offer of these phenomena is, that they come under the class of effects produced by reflex action.

"I shall now pass to quite different cases, but also due to a reflex action, and I will first speak of syncope when induced by a blow on the stomach. Experiments on animals have shown me that in these cases the syncope is produced by a reflex action through the abdominal sympathetic ganglions, the spinal cord, and medulla oblongata, and, at last, the par vagum. I have often and often tried the experiment on animals, of crushing the ganglions of the sympathetic in the abdomen. In such cases there was sometimes a sudden arrest of the heart's action, in other cases only a temporary diminution in the beating of the heart, while in still other cases there was hardly any effect produced. In those animals in which the effect on the heart was produced, I waited till recovery was established. I then divided the par vagum, after which I crushed again the ganglions; not the least effect was then produced on the heart's action, clearly showing that the transmission takes place through the par vagum. In those cases in which the heart is stopped, whether from the cause above assigned, or any other, such as drinking very cold water when in perspiration, or an emotion, etc.,—in those cases of reflex syncope when the patients are on the verge of death, and would almost surely die if nothing were done for their immediate relief—in such conditions there is one means of restoring life, which I have found by experiments on animals to be of the utmost importance, and so much so that very frequently, even when the action of the heart was quite stopped, I have been able by simply pressing on the sternum, and by giving a hard push to the heart, to make it beat again; and after repetition of the same means to make it resume its action. It will not beat long if the cause of the syncope is a powerful one, but still it will beat; and if you continue the use of the means mentioned, it will continue to beat, and in that way you may succeed in reviving a patient. But this is not all. If you add to that cause of revival another, which is most powerful, and which is directly the reverse of what John Hunter tried upon himself when he found he was n a state of syncope one day at the College of Surgeons—if nstead of making the patient breathe as quickly as he can

you stop his breathing altogether, just as if you were trying to kill him by suffocation, you revive him. By producing a state of asphyxia for about half a minute, the patient may be saved; he will have a struggle, and come out of it very quickly. Nothing, indeed, is more powerful to make the heart beat than an accumulation of carbonic acid in the blood. Whether I have been right or wrong in maintaining, as I have done, that the normal and abnormal beatings of the heart, when very tumultuous, depend chiefly upon an irritation by the carbonic acid of the blood—whether I am right in this respect or not—there is no question that if you produce temporary suffocation in these cases, you make the heart beat again, and beat with force. I should add that I have not the merit of having discovered this fact, as I find that in an old book, entitled the *Surgeon's Mate*, and published more than 200 years ago, a writer of the name of Woodall has mentioned it as very important. He, however, does not say on what he grounded his view. There are some other features about syncope of great importance. In any case where the circulation is impeded, you may in a moment throw one or even two pounds of blood into the trunk and head, by simply pressing hard on the four main arteries of the body. If you press those four main arteries, you prevent the circulation going on in them, and at once a considerable quantity of blood returns from the venous system to the trunk, especially if the limbs are kept up so as to allow gravitation to help the movement of the blood.

"A few words now upon asphyxia. There are experiments which show, as clearly as possible, that if you take two animals, one of them having had the temperature of its body very much diminished, the other at a normal temperature, and if you dip them both into water at the same time, the one which has had its temperature reduced will survive twice, three times, and sometimes even five times as long as the other—the duration of life under water being sometimes extended to twelve or fifteen minutes. The greater the previous lowering of temperature, the longer the duration of life There is another very interesting fact. It is well known that persons who have fallen into water have, in many cases, been drawn out and revived after an immersion of a number of minutes. Now, in experiments performed upon animals by applying galvanism to the par vagum so as to stop the heart's action—which is an effect that a fall into water will sometimes produce, by a reflex action from the influence of cold on the skin, or by an emotion—we find life will last much longer;

in other words, the animal will be able to survive a much longer time when dipped under water, from having had an attack of syncope just before. This case, then, is exactly the reverse of the former. In one, syncope is cured by asphyxia; in the other, asphyxia is rendered less mortal because syncope previously existed. I need not stop to show that all these notions we owe to physiological science.

"I shall now say a word upon poisoning. Poisoning often produces death by causing such a diminution of temperature as is incompatible with life. Take, for example, two animals which have been poisoned with opium. Supposing the temperature to be cold in the room, lay one of them near a fire and covered carefully with warm clothes, and let the other be exposed to the cold in a corner far from the fire. You will find, *cæteris paribus*, that the one which is kept warm will survive, while the other will die. This fact we find with almost every organic poison, viz., that there is considerable diminution of temperature produced—if not, *per se*, sufficient to occasion death, enough, at any rate, to add a powerful cause to the other causes existing. Now this diminution of temperature is a feature which we can fight against; and it is, therefore, of the utmost importance, in cases of poisoning, to use every means to keep up the temperature of the body."—*Dublin Quart. Journ. Med. Sci.*, May, 1865.

ON PREVENTIVE MEDICINE, AS ILLUSTRATED IN THE PROPER USE OF FOOD.

Mr. Wilson thinks that we are all, especially our children and youths, much under-fed. He recommends three ample meals of mingled animal and vegetable food; and will have "no putting off of the stomach with bread and butter and slop as the effigies of two of the three meals of the day." Mr. Wilson says:

"But a period comes when milk is no longer the diet of children, and when custom, originating, as we have seen, in Nature's promptings, has determined the necessity of three meals in the day. The infant demands more than three meals, and makes no distinction between the day and the night. The

day of the infant is a day of twenty-four hours; the day of childhood, as of the remainder of life, has a duration of twelve to sixteen hours. The three meals at present under consideration are the morning meal, the mid day meal, the evening meal. These meals represent the wants of the body arising during the intervening intervals. The morning meal is intended to supply the moderate waste of the night, the mid-day meal the active waste of the morning, the evening meal the active waste of the afternoon. The amount of the three periods of waste is pretty equal; the amount of the supply should be equivalent to that of the waste.

"I am desirous of impressing upon my hearers my opinion and firm conviction that food is not only a necessity, but in civilized life a three-fold necessity, and that the three meals should each represent the third of the nourishment of the day, and be so apportioned as to comprehend an equal amount of variety and an equal amount of nourishment. In the primitive life of the laboring class this law is fully appreciated, and is acted upon to the full extent of their means. With the exception of a somewhat more bulky mid day meal, the morning meal and the evening meal do not far diverge from the standard of the mid-day repast.

"But the educated classes are apt to fancy that they possess a knowledge superior to that of Nature, and the result is a perversion of the law of nourishment that leads to the development of debility and disease. A careful, well meaning mother, from purest ignorance—another expression for superior knowledge, the "little" knowledge that is so proverbially dangerous—will tell you that she conforms to the law of Nature in providing for her children three meals in the day. She will describe those meals as breakfast, dinner, and tea, and you will find the composition of those meals to be as follows: A vegetable breakfast, namely, bread and butter, with tea and a little milk; a dinner half animal and half vegetable; and a "tea," vegetable like the breakfast. Here, then, we find education bringing about a total change in the diet of man. Born an animal feeder, he is quickly transformed into a vegetable feeder: that is, more than two-thirds of his diet is vegetable and the remaining third only animal, the exact opposite of that which I consider should be the standard diet of children, namely, one-third vegetable and two-thirds animal.

"My deduction from these premises is, that children are almost universally under-fed, and that the majority of the diseases of children arise from the debility of constitution in-

duced by this habit of under-feeding. If I am right in this view, preventive medicine may do much in the prevention of disease by correcting an error so widely spread.

"The diet of children of all ages should be, a substantial breakfast, with animal food in some shape; a substantial dinner of meat, vegetables, and cereal pudding; and a substantial supper, also consisting, in part, of animal food, The drink may be milk, tea, cocoa, and, possibly, beer. I would call this the diet of health; a diet capable of making a strong body and also a strong mind; and a diet capable of preventing disease. Compare it for an instant with the milk-and-water and bread-and-butter diet of some establishments: the meagre dinner of meat, and the miserable grouting of rice and amylaceous pulp. Rice and amylaceous pulp should have no place in the diet of health, but should be reserved for the sick room.

"Born in prejudice and matured in prejudice, it is the struggle of a lifetime to throw off the trammels of prejudice. We are apt to attach a peculiar signification to the terms which we are in the habit of employing. Ask a person what he usually takes for breakfast, and he will pretty certainly begin his enumeration with the word "tea," the mere drink of the meal; it is, in truth, with him a mere break-fast, instead of being, as it ought to be, a substantial morning meal. The dinner of laber is the luncheon of fashion; then follows the mildly alkaline and stimulating drink that is termed "the tea;" and last of all comes the supper, the late dinner of fashionable life. We have, therefore, before us a succession of three meals and an intermediate drink, but the drink precedes the last meal; and, therefore, the orderly matron, who is more attentive to her 1, 2, 3 than she is to the intention of the daily fare, prescribes for her children breakfast, dinner, and tea—two slops and a meal. But let her, in good English phrase, call the children's meals breakfast, dinner, and supper, and then we immediately obtain two dinners and one slop, the breakfast—an obvious improvement. I have secured to many a child a reasonable evening meal by suggesting to the mother the mere use of the word "supper" as the name of the third meal. No human being could call bread and butter and tea by the hearty name of supper.

"Assuming that the amount and richness of the supply of food should be determined by the offices which it has to perform, there is no period of life when more food is required than in childhood and youth. The hard-worked laborer in a

long summer's day scarcely exhausts a greater quantity of nutritious matter than a growing boy of ten or twelve years of age; in the laborer the consumption is waste; in the growing boy it is bestowed in the construction of the body, in developing and building up the future man. And it is no uncommon thing to find that although the general construction of the body has been fairly performed, there is some one organ of the economy that has fared less well than the rest, and that part not uncommonly the skin; hence the origin of acne, of the ringworms, *et hoc genus omne.*

"If it be admitted that food is the source of the elements of which the body is composed, what kind of body can be expected in the case of a deficient supply of food, whether that deficiency proceed from actual want or from some perverse theory of refinement founded on a false conception of the nature and objects of food, and of its direct convertibility into the flesh and blood of man? Parents are too apt to take their own stomachs as the standard of diet of their children; a cup of tea and a slice of toast suffices for them, so it must suffice for the little ones. I knew a lady who brought up her children on mutton alone, because she herself could digest nothing but mutton. Her children were a feeble, puny, sheepish race, always in the doctor's hands. A mother, in anticipation of the full meal at seven o'clock, can afford a light lunch; but she unfortunately concludes that, because a light mid-day meal is good for her, a spare dinner is equally proper for her children. She has heard somewhere that suppers are heavy and interfere with sleep; so that the children must be content with their tea, and go supperless to bed. Parents have rights over their children, but not the right of feeding them in such a manner as to make them the subject of disease. Such parents become the authors of a puny and degenerate race, and are unintentionally traitors to their country,

"If the two periods of life already adverted to be important in in their influence on the future man—namely, the period of infancy, ranging from birth to the age of two years, and the period of childhood, ranging from two years to seven years—the next two periods, namely, those of boyhood and youth, are equally so. While the food of the infant and the food of the child are abundant and regular, the food of the boy and the food of the youth should be the same. Both are occupied in the great business of growing life; on both are dependent the future man, for his strength and for his manhood."—*N. Y. Med. Journal. Half-Yearly Ab. of the Med. Sciences, etc.*

EDITORIAL AND MISCELLANEOUS.

AN EXTRAORDINARY CASE OF ADHESION.

By WM. MEACHER, M.D., of Pardeeville, Wisconsin.

About a year ago Mr. Kinney, of Marcellon, came to me to have his thumb dressed, having got it injured while hitching a yoke of oxen to a wagon, by getting it caught in the chain.

Upon examining it, I found that a large piece of flesh had been jammed off, exposing the end and under surface of the bone. The piece of flesh fell on the ground, and Mr. Kinney picked it up, (thinking it a good plan to "save the pieces,") and replaced it, wrapping the thumb up with a bit of rag—in which condition it remained until I saw it, about two hours after the injury.

After looking at it, I hardly knew what to do with it, for it appeared evident that if I removed the piece, (which I did not do at all,) and cut off the end of the bone, I could not get flesh enough to cover the stump. Neither did I think I could get flesh enough to cover the stump, by amputating at the first joint; for the piece that came off reached half way to the second joint, and the patient objected to having it amputated above the joint. So, hardly knowing what else to do, I secured the piece in its place with some small strips of adhesive plaster, and left it for the present.

It remained so until the next day, when I examined it again and found the piece apparently alive and healthy. So I

concluded to let it alone as long as it kept so, which I did until it grew fast, and sound.

The Princeps Pollicis artery was torn off opposite the joint, and drawn out some; and when the piece of flesh was replaced the end was left sticking out at the side of the thumb, and I was obliged to touch it with caustic to stop its bleeding.

The patient was over 60 years old. The piece was not cut off, but jammed, or pinched off, and imperfectly replaced, or in other words, coaptation was imperfect.

We publish with pleasure the article of our esteemed correspondent, yet are compelled to say, that what it narrates is almost too much for our credulity, and makes us think that the patient has misled his surgeon—and possibly himself, into the supposition that the part was actually severed from all vascular connection with the body. This is so unlike what we every day observe, that we could only believe such a thing possible after undoubted experimental demonstration. As *apropos* to the subject, however, and tending to the credibility of the case reported by Dr. Meacher, we quote from Abernethy's Lectures on the Physiological views of John Hunter:

"Mr. Hunter was convinced that life might remain in a dormant state, in detached parts, for sixty hours. He therefore could not wonder at the facts with respect to transplantation or engrafting of portions of animal bodies with which he was acquainted; yet he says that the transplanted part must have life, to accept of the union, because he believed, that a correspondent and co-operating action was necessary for its accomplishment.

"Mr. Hunter observing how firmly the gum sometimes attached itself to a transplanted tooth, and thinking the comb of a cock resembled the gum in its texture, transplanted the tooth of a dog and set it in the comb, where it became firmly fixed. He next transplanted a gland taken from the abdomen of a cock, to a similar situation in the belly of a hen, where it also became attached, and as he believed, nourished, for he probably thought he had injected it from the general arterious system. The uniting medium by which it is firmly connect-

ed, is certainly very vascular, yet I do not see that any injection has passed into the vessels of the transplanted gland. The preparation is in the Museum, so that you can examine it for yourselves. Mr. Hunter probably believed that it was nourished, from its neither wasting nor decaying. As, however, the evidence was not very distinct, he next transposed the spur of a young hen, to the leg of a cock, and that of the latter, to the leg of the former bird, which spurs grew, and thus set the subject at rest in his mind. It may seem, however, curious, that the hen's spur grew to a greater size on the cock's leg, than it would have done upon the parent animal, which Mr. Hunter considered as a proof of the greater vigor of constitution of the male bird."

HEREDITARY ERYTHEMA.

Reported by C. A. WHITE, M. D., of Iowa City, Iowa.

A few months since I was called to vaccinate a man of 36 years, a native of Wales, together with his son, a lad of 8 years, both of whom, I noticed, had very red faces. The father informed me that they had both been so from their birth. The redness resembled in appearance what we often see in summer in cases of persons having exposed to the sun for a short time, parts of the body which are usually covered. It would disappear under pressure, and immediately reappear when the pressure was removed. Both have always enjoyed the most robust health, and have never felt pain in the parts thus affected.

It covered the whole face *symmetrically*, extending from just beneath the chin to the lower portion of each temple, thence forming an obtuse angle on the forehead. This outline was identical in both father and son. The skin had no appearance of tumefaction nor disease.

THE TREASURES LOCKED UP.

The Surgeon General has forbidden all medical officers giving information of officially recorded facts of the medical and surgical experiences of the war. All outside of official positions must fold their hands and wait for the scientific feast preparing in the official kitchen at Washington, after the maxim, probably, that *too many cooks spoil the broth.* This does very well for those inside, but we understand there are some outside experts who claim that they might be let into the labor, with no damage to those now at work at the vast amount of raw material, and with infinite advantage to the great public, at whose expense these records have been made and preserved. If this has come to be the general policy at Washington, we may expect soon to hear that Horace Greeley is shut out from access to the archives in his department of history.

DR. BRANDT, a distinguished Scandinavian Physician, who has recently been traveling in this country, in a communication to one of the journals of his own country, speaks highly of our hospitals and the prominent members of the profession in America. Of Prof. Brainard he says: "He stands foremost in the country, and is remarkable for his originality as a Surgeon, and as a Lecturer, he is clear, comprehensive, and practical."

OBITUARY.—Died, of Dysentery, JOSIAH LEE, M. D., at Fairmount, Vermillion Co., Oct. 13, 1865.

SOUTHERN MEDICAL JOURNALS.

It is with no common satisfaction that we receive the promise that at no distant day, our editorial table will again be graced by an exchange list from the Southern States. Thus one after another, and in rapid succession, are the traces of the great conflict passing away, and while all acrimony of feeling seems to be fading from the minds of men North and South, there certainly will be no lack of fraternal spirit between the medical profession of the two portions of our country—for their work has been the same in both armies—simply a labor of kindness to brave and unfortunate men, regardless of the uniform in which they were clad. The question of the practibility of "peaceable secession" has been settled in a way that the blind may see, the deaf hear, and the unlettered read, and the experiment is not likely to be made again. Let us then forget the past, and unitedly address ourselves to the common work before us.

We have received the following notices:—The Richmond *Medical Journal* will be issued at Richmond, Va., commencing in December. It is edited by E S. Gaillard, M. D., W. S. McChesney, M. D. It will be a monthly of 80 or 90 pages. The subscription price being $5, payable in advance.

The Savannah *Journal of Medicine* will be issued from Savannah, Ga., January, 1866. It will be a bi-monthly of 72 pages, at $4 per annum in advance. Editors—Juriah Harriss, M. D., Jas. B. Read, M. D., J. G. Thomas, M. D.

The *Medical and Surgical Monthly*, to be published at Memphis, Tenn. The first number will appear January, 1866. A monthly of 64 pages. Terms for one year, $6; half-year, $4. Editor—Frank A. Ramsey, A. M., M. D.

RELATIONS OF THERAPEUTICS TO MEDICINE.

It will be admitted by most thinking men that the study of diseased or healthy organization has revealed more of the effects than of the essence of disease. So subtle are the conditions by which the equality of life is preserved, that, in a vast proportion of instances of death, the most refined anatomy and chemistry fail in discovering a commensurate change or in explaining why what was a living creature yesterday, lies before us in a few hours a decomposing mass of clay. Hence, we must be cautious in extensively adopting any therapeutical system which is solely based on inference from visible organic change. In the present imperfect state of our knowledge, we must not neglect that study of therapeutics which is essentially experimental and inductive; and if there be one thing wanting more than another in our science, it is that men should know the nature and difficulties of therapeutic evidence. If, as I have often heard Professor Acland observe, only a few of our well-instructed brethren who are in charge of our public institutions, well aware of the established laws of disease, whether essential or non-essential, and good observers, were to take up any one remedy, whether old or new, say digitalis, and faithfully record on the one hand the character and history of the case, and on the other the results of the use of the particular medicine, or other therapeutical proceeding, we should ere long have such a mass of unbiased statement of facts that safe conclusions could be drawn. Until this is done, the position of therapeutics will be an inferior one. It will not be any trustworthy guide in practice, except in a few salient instances, and will be powerless in its other great function of being the key to, and the test of, pathologic conclusions.

To bring therapeutics up to this level seems to be the great desideratum. We may fairly hold that the time is ripe for the commencement of its study with the view to its higher functions or development. Without placing limits to the material investigations in which we are aided by the microscope and by chemistry, we may believe that our knowledge of the intimate structure and composition of the solids and fluids of the body is so extended as to give to the therapeutist reasons for holding that he is now far better acquainted with the living organism than he was a quarter of a century ago; and that so he has a broader and more secure foundation to build upon. But the therapeutist must also possess assistance of

another kind. He must know the principles of accurate reasoning; he must distinguish between the *post hoc* and *propter hoc*; he must be content still to deal with vital phenomena as constituting a class of the nature of which our knowledge is so deficient, that we have still to study their modifications by external agents, experimentally, and without as yet much reference to their relations to structure or to vital chemistry; he must take into account the laws of periodic action in health and in disease, and determine, or seek to determine, as he proceeds, whether the simplest form of acute local as well as of general disease is not under some of these wonderful laws; he must study the question as to whether medicinal interference extinguishes morbid action, postpones it, or, by breaking its circle, as suggested by Professor Boeck, though this be followed by temporary good, deranges the process which is to end in its removal; he must well understand that certainty in medicine must be approached by the balance of probabilities, and have a full insight into the difficulties of medical statistics, which result from the labors of more than one observer. Other circumstances will suggest themselves to you—as the influences of locality, of race, of age, sex, habit, and previous history. I will not dwell on them, further than to remark that, had Broussais attended to one of them, in particular, he would not, I think, have fallen into the error of declaring the non-existence of essential fever from observing disease within a narrow circle of the world.

If therapeutic science is to advance, it must be followed and studied in the most severe scientific spirit.—*Dr. Stokes' Address before Brit. Med. Assoc.*

ON CHRONIC ULCERS.

By FREDERICK C. SKEY, F. R. S., etc.

The more chronic the ulcer, the larger its size; the more aged the subject, the more remarkable is the influence of opium in effecting its cure. Treat such a case of chronic ulcer of the largest size, having a pale, flat, bloodless base, a high mound of lymph around it, covered by unhealthy integument, the sore pouring out a large quantity of watery ichor, satura-

ting the linen stockings and other appliances—I say, select such a case, occurring in old age; give such a man ten or fifteen drops of tincture of opium night and morning, leave his bowels alone, and observe the base of the sore in five or six days; it will exhibit a number of minute red points, which, daily increasing in number, will rise up in the form and identity of healthy granulations, and cover the entire surface of the ulcer. Contemporaneously with the gradual elevation of the base of the ulcer is the descent of the surrounding eminence, and the commencement of the process of cicatrization. If I desired to select an ulcer on behalf of a student, with a view to illustrate the character of perfect granulations as they appear in a thoroughly healthy example, I would select an ulcer which had been treated by opium in preference to any other. If it be supposed by any man having limited experience in the employment of opium, that any evil to the constitution attaches to the use of that valuable agent, I can only reply that its salutary action on the ulcer is obtained solely through the healthy influence it exercises on the constitution. Judiciously employed, no drug in our pharmacopœia is more innocuous.

DEATHS BY CHOLERA IN NEW YORK.—The deaths by cholera in the city of New York, during previous visitations, foot up as follows:

In 1832 there were 3,513 deaths. In 1834 there were 971. In 1849 there were 5,071. In 1852, 374. In 1854, 2,509. In all other years, 137. Total, 12,775.

MARRIED—At the residence of the bride's father, George W. Gideon, October 30, by Rev. T. N. McCorkle, DR. R. T. RICHARDS and MISS SPEEDY GIDEON, and DR. B. K. SHUTTLEFF and MISS LYDIA GIDEON, all of this town.

Dr. Valentine Mott's estate was valued at $400,000. He bequeathed his anatomical museum to the New York Medical College.

OHIO STATISTICS OF THE INSANE.

The last report of the Central Ohio Lunatic Asylum gives the occupations of all persons admitted in twenty-six years. In dividing the number of each occupation by the number of the insane it has furnished in that time, we have the following:

Speculators	1 to 24
Artists	1 " 58
Clergymen	1 " 84
Students	1 " 97
Tailors	1 " 188
Merchants	1 " 154
Lawyers	1 " 169
Physicians	1 " 184
Farmers	1 " 195
Butchers	1 " 215
Blacksmiths	1 " 315
Laborers	1 " 431

The report gives 22 crazy loafers, 23 physicians, 35 clergymen, 1,195 farmers, for the period covered.

We have received the following books from the publishers:

Lectures on Inflammation, being the first course delivered before the College of Physicians of Philadelphia, under the bequest of Dr. Mutter. By J. H. Packard, M. D. Philadelphia: J. B. Lippincott & Co. 1865.

Stimulants and Narcotics—Their natural relations with spinal researches on the action of Alcohol, Ether and Chloroform on the Vital Organism. By Francis E. Austie, M. D., M. R. C. P. Philadelphia: Lindsay & Blackiston. 1865.

Researches on the Medical Properties and Application of Nitrous Oxide. By Geo. J. Zeigler, M. D. J. B. Lippincott & Co. 1865.

CHICAGO

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ORIGINAL COMMUNICATIONS.

CEREBRO-SPINAL MENINGITIS.

Reported by C. A. WHITE, M. D.

In the night of May 16th, 1865, I was called in haste to see a man aged — years, of the appearance of a good constitution. He had been feeling some depression of the vital powers for some days, and being himself a physician, though not in practice, he had prescribed for himself. He was sitting in his room with a friend at 11½ o'clock, when he arose and went towards his bed, but fell upon his face before he reached it. His friend immediately went to his assistance, and found him in convulsions, and immediately sent for me. I found him insensible, extremities cold, face flushed, abdomen tympanitic and very tender, particularly the epigastric region, pupils unequally dilated, strabismus, head thrown back, nuchal region very tender.

The convulsions and intervals were each of about ten minutes duration. During the convulsions the pulse became very weak and slow, the breathing labored and often suspended from one to two and a-half minutes at a time, the jaws set, hands clenched, and arms and legs extended. During the intervals he would grope for imaginary objects before him, or which seemed to cover his eyes.

The convulsions continued until near 4 o'clock of the morning of the 17th, diminishing in intensity, with longer intervals, the pulse gradually improving in volume and frequency, but somewhat irregular.

As the convulsions passed off, the warmth of surface returned and he fell into profound coma, yet he moaned with pain, and was immediately aroused when the epigastric or nuchal regions were touched. There was evident imperfection of hearing and vision, some soreness of the joints, but no hyperæsthesia of the general surface.

As deglution was impossible I was confined at first to external remedies. I made immediate application of dry heat to the feet, legs and arms, by means of oats heated in pans in the stove and emptied into pillow slips, which being loosely tied allowed of free packing around the limbs. I then applied mustard poultices over the stomach, and to the back of the neck and occiput. When the convulsions ceased, deglutition was possible but very difficult. Articulation was also very difficult. I ordered Tinct. Ferri Chloride ʒ 3; Tinc. Cantharidis ʒ 5. Misce, Sig. Take 50 drops every hour.

8 o'clock A. M.—Extremities warm, pulse 65, and a little fuller than natural, tongue of natural dimensions, dark, dry, and fissured in the middle; coma not so deep, pain great as before, passed urine of natural quantity and color. Continued the tinctures, but lessened the dose to 40 drops.

11 o'clock A. M.—Coma passing off; tongue moist but dark; pulse 60 and full; tympanitis somewhat relieved; pain not so intense; less disposition to throw the head back.

3 o'clock P. M.—Patient quite rational; comprehends his

case and has given his friend directions concerning his business while he is sick, and if he should die, "gave him commandment concerning his bones," and awaited the result like a man. Tongue moist; pulse 68 and of natural fullness; symptoms of strangury present, from effects of the medicine. Discontinued the tinctures, and gave castor oil with 20 drops turpentine.

5 o'clock P. M.—Patient about the same; difficulty of swallowing nearly gone.

8½ o'clock P. M.—Convulsions returned suddenly while I was with him anticipating such a result, although there was no other admonition than a reduction of the pulse in force and frequency. They were of the same character as the others, but less severe, and with less disposition to throw the head back. Treatment, same as before.

They continued an hour and a-half when he fell into a comatose condition, but aroused in half an hour to have an evacuation from the bowels, which was repeated three times within an hour, with a free passage of urine, the warmth of surface meantime improving.

12½ o'clock A. M. of the 18th.—Coma continues, but pulse improving; deglutition and articulation almost impossible.

7½ o'clock A. M.—Coma somewhat relieved; pulse 58 and full; tongue dry again; deglutition very difficult; moaning with pain. Applied mustard poultices to the neck and epigastric region as before, and also gave the tinctures of iron and cantharides as in the first instance; tympanitis gone, but pain in the nuchal and epigastric regions continued.

10½ o'clock A. M.—Pulse variable, from 56 to 70 within 15 minutes, and slightly irregular; coma slight, surface warm, abdomen tender, but painless; tongue becoming moist.

1 o'clock P. M.—Consciousness complete, with but little disposition to doze; has just passed a quantity of high-colored urine; pain decreasing; pulse 56; tongue moist.

4 o'clock P. M.—Patient comfortable; coma gone; pain and tenderness of the neck much less, but feels a deep-seated

acute pain in the region of the foramen magnum whenever he moves his head suddenly; passes urine of natural quantity, and rather high color. Symptoms of strangury becoming apparent, the tinctures were discontinued; pulse 54, not very strong; tongue moist and dark; general surface of natural warmth and moisture.

From 8 till 12 o'clock, pulse 56, of good volume; urine of natural quantity, and rather high color; slept well during the night; gave no medicine.

8 o'clock A. M. of the 19th.—Pulse of good fullness, but falls to 50 while sleeping; ordered Sulph. Quinine et Pulv. Capsici, of each two grains every two hours, also beef tea, with an occasional tablespoonful of hot whisky punch.

From this time until towards morning of the 20th, he remained comfortable, but with considerable prostration, which was relieved by the use of stimulants.

9 o'clock A. M. of the 20th.—Patient comfortable and improving; soreness of neck and stomach diminishing. Discontinued all medicines, and gave beef-tea and egg-nog.

From this time forward the improvement has been steady and comparatively rapid.

I have no doubt whatever of my diagnosis of this case, but the following variations from the typical forms of so-called spotted fever are worthy of remark.

The attack was not attended at its commencement by any distinct rigor, although there was great coldness of the extremities.

No eruption appeared on any part of the body.

The pulse never went above 70, and this only during the intermission.

Thirst was never great during the whole attack.

The delirium was at no time violent.

SELECTED.

HOW LONG SHOULD A PUERPERAL WOMAN REMAIN INCUMBENT, AND WHAT SHOULD SHE EAT?

By JAMES F. HIBBERD, M. D., Richmond, Ind.

[Read before the Wayne Co. (Ind.,) Medical Society, and after full discussion, wherein much diversity of opinion was manifested, the paper was ordered to be presented to the Cincinnati Lancet and Observer for publication.]

I have long had some doubt whether the regimen prescribed by our modern text-books for women in child-bed after ordinary uncomplicated labor, was that which is best suited to their condition, and most conducive to their early restoration to their common standard of health.

At this time, however, in fulfilling my duty as essayist, I propose to inquire into the teachings in relation to recumbency and diet only, of the puerperal state. And to the end that the drift of my remarks may be more clearly apprehended, I will state,

1st. That I believe the duration of the period of recumbency prescribed by the several obstetric authors for puerperal women is, for the most part, a mere assumption, announced as it were *ex cathedra*, and not founded on any teachings of science, nor warranted by correct observation; and

2nd. That the diet recommended by modern obstetric authors for puerperal women is unnatural and unscientific,—as a general rule injudicious, and in many instances mischievous

Let me now present what the most recent American author says on these points. I quote from Hodges' "Principles and Practice of Obstetrics," pp. 108-9: "The *diet* of the woman should always be 'low,' that is, of simple, farinaceous articles, neither hot nor cold, as the former might prove too exciting, while cold drinks might cause intestinal or uterine pain. The objections to a full diet are the predisposition to

inordinate reaction, which might result not only in 'milk fever' and mammary inflammations, but also in the more severe forms of ovarian or peritoneal inflammation," etc." "The patient should be kept constantly in the recumbent *position*, not being allowed to sit up even when the bowels or bladder are emptied. The necessity for this rule is, we think, urgent, as there is danger of producing weakness or syncope from exertion, and occasionally of re-exciting uterine hæmorrhage. Moreover, the uterus being large and heavy, and the ligaments elongated, there is danger of its premature descent to the lower parts of the pelvis; and if there be any predisposition to inflammation, it will be greatly aggraved by every muscular effort. It is customary with most practitioners here and elsewhere, to allow patients to sit up after the eighth or tenth day, and soon after to commence walking. We are confident, however, that it is advisable to maintain the recumbent position almost constantly for about four weeks, and at the same time to avoid all straining efforts at stool, etc. This rule is founded on the facts already mentioned, that the uterus does not recover its natural size nor its ligaments their normal length and tonicity until four or six weeks after confinement. Hence, if premature muscular effort be made prior to this period, there is great danger of causing prolapsis, retroversion, or some other displacement of the organ, which often embitters life for many years; perhaps most women date the origin of their troubles in this respect from one of their labors. On the contrary, if they remain quiet, the natural disposition of the ligaments to contract after delivery may prevent these unfortunate accidents."

The foregoing is from the latest American author, whose book was published in 1854. Now, before indulging in any comments, and by way of comparison, let me introduce a quotation from the first American author in Obstetrics, Samuel Bard, M. D., LL. D., who published "A Compendium of the Theory and Practice of Midwifery" in 1817. He opens his fifth chapter in these words: "Among savages and half civilized nations, women made little or no change in their general conduct in consequence of child-birth, but return to their usual occupations almost immediately after delivery. Even among us, the more hardy individuals of the laboring women submit to a very short confinement; nor is it now so general among the higher classes of society, to be confined to bed for eight or ten days, and to be restricted to a particular regimen for a much longer time, as it formerly was. I believe, in so

doing, they are approaching to a wiser and more natural conduct." Then, after declaring that, nevertheless, the puerperal woman requires some special attention, he says: "This attention must always be in proportion to the former habits of the woman, as well as to her general health and strength, and to the fatigue and distress she has undergone in her labor." He requires that she shall not "rise to an erect posture immediately after even the most favorable labor," and adds, "after one or two days, women should rise from their beds, and sit up for a longer or shorter time every day, according to their strength and inclination."

In regard to diet, Bard says that some practitioners "under the idea of the weakened state of their patients, have ordered a warm, cordial, stimulating diet; whilst others from apprehension of fever, have restricted them to one that is very low and abstemious. But all general rules on this subject, except that the diet should be temperate, are liable to error. In ordinary cases, common food, avoiding gross meats and spirituous liquors, may be moderately indulged in;" and "whenever it can be procured, good ripe fruit may be taken freely."

The regimen inculcated by these two men, each pre eminent in his day, is widely separated, and in strong contrast, and I am free to say that, to my mind, the fifty years progress from Bard to Hodge has been an "advance backwards." The former looks at his patients as individuals and treats each according to her previous habits, present condition, instinctive desires, and sense of ability; the latter makes a grand class of all he attends and treats them by a common rule, regardless of their former habits and present condition, totally ignoring their rational wants and instinctive desires, and heedless of their sense of ability. Unhesitatingly let us suppress the teachings of the last American, who speaks to us to-day, and in their stead revive the doctrines of the first American, whose words come to us from the depths of fifty years in the past. Hodge writes as if he were the inhabitant of a closet, and had only a distant and hypothetical view of the condition and requirements of the occupant of the lying-in chamber; while Bard talks like one standing by the bedside of his patients, giving clinical instruction from personal observation and experience. However this may be, any practical accoucheur will see at a glance that Bard is telling of things that any one may witness, and is giving instructions that can be practically carried out; while on the contrary, Hodge is portraying cases

that he nor any one else has demonstrated to exist, and laying down rules that no practitioner in this longitude has sufficient influence to enforce, even if he were convinced of their propriety. Suppose a woman in firm health and good condition falls into labor, and without delay, or more than ordinary suffering, is delivered of a child. After resting two or three days, she feels able, and doubtlessly is as able as she ever will be, to get up. Now if she be a woman of good sense and vigorous will, I do not believe there is a doctor in Christendom, outside of Philadelphia, without it is Hodge, whose advice would keep her in bed for four weeks, and if there is one in that city who could, and would, keep her thus confined, it would be better for the woman if he were otherwise engaged when she sent for him.

Hodge asserts that the necessity for low diet for the puerperal woman lies in the fact that there is a "predisposition to inordinate reaction" which a full diet might develope into serious inflammation. Upon what testimony does the existence of this "predisposition to inordinate reaction" rest? There is no "inordinate reaction" in poor women who can not afford other than common food, have no special nurse, nor time to lie long in bed. Then why should the "predisposition" pertain to those who can afford these things? Before a "predisposition to inordinate reaction" can be taken as the basis of management, its existence must, in some way, be shown, simple assertion of its existence should not be sufficient for that purpose.

And, furthermore, the food must not be hot because it "might prove too exciting," nor must the patient have cold drinks lest they "might cause intestinal or uterine pain." We must suppose the author to mean by "hot" and "cold" the temperature of ordinary food and drink; and if so, I must again insist upon some evidence that they are thus mischievous. The expressed fear that they "might" excite, or cause pain, should not control rational people who reason for themselves from every day's experience.

To me it looks as if the diet had been determined upon by some intangible rule or personal whim, and the explanation of the necessity of such diet invented after the practice was established. Possibly the author had an exceptional case where a woman took a plate of hot slop made of some "simple farinaceous article," and presently became excited; or another who took a drink of cold water, followed in due time by a twinge in the bowels or a contraction of the uterus; and in a

fit of abstraction, or false reasoning, he allows these two cases to dictate a rule, regardless of the two hundred cases around him, which have taken hot food and cold drinks without evil consequences, and should, by force of numbers, be allowed to establish the line of treatment.

If the modern advances in the study of the physiology of digestion have established anything it is that the natural appetite and instinctive desire of an individual are of higher importance in determining a suitable diet for such individual than the most refined science that ignores this source of information. There is nothing in the condition of a woman in child-bed, that I am aware of, that should deprive her of the benefit of having her diet list made out, or modified, by the demands of her appetite, and the preferences of a discriminating palate.

A woman at term goes about, doing her usual household duties, feeling well, and eating ordinary food with the others of her family. In the afternoon she feels some pain, but takes tea as usual. The pains increase, and before morning she is delivered of a child, after a normal labor. She takes a nap, and when the morning meal-time comes she does not feel like getting up, but she does feel like having some breakfast of the same kind of food she is accustomed to, but probably not so much of it. Pray what is there in her condition, present or prospective, to forbid her to have some toast, a cup of coffee, and a bit of steak with potato? Nothing, I trow, but the fact that her doctor and her nurse have long been in the habit, without rhyme or reason, of restricting the diet of women in her situation to panada, gruel, or some similar slops. Do I hear some one say that many women prefer these latter articles to the former? I venture to reply that wherever a woman manifests such a preference, it is the result of the teachings of her wrong headed attendants, and never her natural desires.

I suppose it would be a work of superrogation for me, at this day, to enter into a formal argument to show that the common mixed diet of every day life is more digestible, more easily assimilated, and generally better adapted to meet the wants of the system than the "low" diet, consisting of slops made of "simple farinaceous articles," and similar liquid preparations prescribed by our text-books for puerperal women who "are doing as well as could be expected."

Hodge is the advocate of the extremest recumbency. He complains that most practitioners allow their patients to rise

in eight or ten days, while he is sure they ought to be kept down four weeks. It seems incomprehensible that a sensible Obstetrician of forty years experience should lay down such a rule as this with no more satisfactory foundation than Hodge advance. "The uterus does not recover its natural size, nor the ligaments their normal length and tonicity until four to six weeks after confinement."

Then, my dear sir, you ought, according to your own theory, to keep your puerperal women in bed for the full measure of six weeks and not stop at the modicum of four weeks. You declare four weeks to be the shortest period in which any woman's reproductive organs are restored to a normal condition after parturition, the time extending from this to six weeks, nearly all women, of course, being unrestored for more than four weeks; and yet you permit all women to abandon a recumbency at four weeks which you assert to be necessary to be maintained until full restoration. Do you not thereby become responsible for the "prolapsis, retroversion, or some other displacement of the organ" of those whose wombs, &c., do not become restored for more than four weeks? Your theory and practice do not correspond. You are inconsistent with yourself, and, therefore, in these premises, not a safe monitor.

Hodge presents us with no statistics, no facts, no experience, no arguments, to sustain his declaration that "if premature muscular efforts be made prior to this period," (i. e., four to six weeks.) "there is great danger of causing prolapsus, retroversion, or some other displacement of the organ," he only says it is so. I do not believe the position tenable.

The size of the uterus is such immediately after delivery that it is not dependent upon its ligaments to sustain it above the superior pelvic strait, its diameter is too great to permit to pass without other force than its own weight. Cazeaux says it is seven inches in diameter, and Churchill gives it "about the size of a fœtal head." No accurate measurements have been made that I am apprized of, but I presume it is within the experience of all accoucheurs that the uterus feels, through the abdominal walls, as if too large to be in any danger of passing through the strait, and as we never witness such a mishap in women whom accident or necessity has brought to their feet at such a time, we may safely conclude that the danger from this source is one of the refined phantoms of highly artificial Obstetricians.

If prolapsus could not take place, certainly we need not

fear "retroversion;" and what Hodge means by "some other displacement of the organ," I do not know, but imagine he did not mean anything, except to round up a sentence.

If we were to judge of the value of a practice by the condition of those who are its subjects, there could be but little question whether the early rising from the puerperal bed were not better than long recumbency, for it is quite apparent that poor women whose necessities take them from their beds almost immediately after confinement, are much less sufferers from the ills that Hodge enumerates than the affluent and luxurious, who are able and willing, to a greater or less extent, to carry out the injunction to remain quiet and recumbent for four weeks; but the inference to be drawn from this comparison would not be just, for the former class of women, in their mode of living and exercise, are undoubtedly better prepared to stand the trials of parturition, and recuperate sooner from its disturbing influences than the latter class.

Nevertheless, if a woman is fed on slops insufficient for her nutrition when she has appetite for proper food, and is kept for weeks horizontal after she is able and willing to be up and take exercise, I believe she will be the victim of that general ill-health and local disorder that Hodge prescribes these measures to prevent. In other words, the regimen prescribed for puerperal women by Hodge, if literally carried out, will, in my judgment, cause the very difficulties he is endeavoring to avoid. And this jndgment rests upon the fact that those women who, in the puerperal state, are least observant of these extreme artificial rules, are the most healthy, and suffer least from child-bearing.

Moreover, it is altogether more consonant with the present state of physiological, pathological, and therapeutical knowledge that this should be the case. Simplicity and naturalness are becoming more and more the rule in all departments of medicine, why should the regimen of puerperal women be the sole exception to this better state of things? In all other branches of Obstetrics we are making advances; getting clearer views of the mechanism of labor, learning wisely to do nothing during parturition when nature is competent to do all. In this relation it has become an axiom that "meddlesome midwifery is bad;" let us carry the idea involved in this expression beyond the hour of labor and make it applicable to the post-parturient period where we appear to be becoming more and more "meddlesome" without anything to justify it.

Mr. Ferguson, in a recent clinical lecture on surgical operations (*Medical News* and *Library*, Oct., 1859,) when, speaking of after treatment, says, "some fancy that the perfection of treatment is to keep the patient low; others, that a rather stimulating course should be followed, particularly if the patient's condition is not satisfactory. For my own part, I strongly advocate giving nature much of her own way here also." And a little further again, "the less medicine the better; and experience has convinced me that the nearer a patient is kept to what may be considered his natural style of living, the less will be the shock from the operation, and the more rapid will be his recovery." No one doubts the value of this advice in surgery, and I believe the principle can be applied to midwifery with even more force than surgery.

It must not be understood that Hodge has been selected for criticism because he is more amenable to animadversion than any other modern writer on obstetrics, he, certainly, advocates a longer recumbency than any author I haved consulted, but it was not on that account his teachings were selected for the foundation of my essay, but because his book was the last one presented to us, and it is conceded on all hands to be amongst the best, if not the most excellent, work on obstetrics extant. In the matter of diet, Hodge is not nearly so precise as most recent writers; he merely requires that it be "low, simple, farinaceous articles, neither hot nor cold," while most authors name the particular articles of food to be taken, and some of them give a special diet for each day for a fortnight or more after parturition.

Perhaps we can not more profitably occupy a few minutes than in briefly reviewing the teachings of some of the modern obstetric authors on the points we have under consideration.

Bedford says "one point I wish strongly to impress upon your recollection—*keep your patient in the recumbent position for at least ten days after delivery.*" Bedford must be one of the practitioners that Hodge complains of for letting their patients up in eight or ten days. In regard to diet Bedford prescribes "gruel, arrowroot, tapioca, boiled rice, tea and toast, soft boiled eggs, etc., for four or five days, and then if all "pass on favorably she may have meat and vegetables, and begin gradually to resume her ordinary diet."

Cazeaux tells us that the newly delivered takes a delightful slumber and "after the first nap she might sit up in bed for a few moments and take a little broth." Why do not the wombs of all Cazeaux's patients slip down to the bottom of

the pelvis? But he requires common women to stay in bed nine days, and those in easy circumstances two weeks. He commands the woman to be limited to "a little porridge two or three times a day, and some broth during the night," for one or two days, and then return to her ordinary diet by the twelfth or fifteenth day. During the whole lying-in he allows the woman no water to drink but requires her to use instead, various preparations of art "such as a solution of gum, or an infusion of mellows, or violets or linden, the orange or chamomile flowers, etc., etc. It seems scarcely credible that a standard text-book, published only seven years ago, should promulgate such nonsense. Cazeaux is further particular to declare that no acidulated drink must even be allowed to those who nurse. Why, he does not vouchsafe to say, but I have heard women assert that acids taken by the mother will give the nursing child colic. I know of nothing in medical science to warrant such a conclusion. Did anybody ever witness such a result?

Tyler Smith directs that all patients, when circumstances will permit of it, should remain horizontal for ten days; and the diet should be light, without meat, until after lactation is established, when substantial food should be given. He warns against the protracted use of innutricious food by asserting that most cases of puerperal mania he has seen were caused by exhaustion. If any other writer has announced this conclusion I have not seen, or remembered it; but if it be true, it constitutes a very urgent reason for puerperal women being allowed an acceptable and nutritious diet.

Cock, in his excellent little manual of obstetrics requires "women to be kept in bed until after the fifth day, . . expect to be about the house in the third or fourth week." "Diet first four days, slops, tea and toast, soda biscuit, bread, panada, arrowroot, oatmeal or Indian gruel, tapioca, sago, chicken or mutton broth." Now mark the declaration that follows this farrago of fluids. "This liquid diet is not usually as digestible as solid food; after ascertaining this, use mutton, chicken, oysters, game, beef, eggs." It seems to me it would be wiser to give these latter articles in the beginning without first experimenting with the former, and the more so that no one has ever advanced a single adequate fact to deprive a puerperal woman of solid food if she prefers it. Cock closes this poragraph with the recommendation that the woman "gradually return to ordinary diet, avoiding acid articles for the sake of the child." There it is again, nothing sour to the

mother lest the child suffer; but whether is the digestion of the child that is to be spoiled by the acid, or it is to make the nursling the victim of an acerbity of temper, the author does not inform us.

Meigs says: "I have found that many of my patients, and some in the class of what are called the "upper ten thousand, were destitute of all symptoms of indisposition. Such people might get up, and I have seen elegant women get up, and be about on the third day, without pretense of after indisposition." Having candidly enunciated these truths, important and full of significance as they are, it is quite surprising that a man claiming to be a philosopher should proceed thus: "still it is a safe rule to advise the keeping of the bed for many days, . . . a rest of nine days is a short rest after nine months of fatigue crowned by the exhausting conflict of labor." Nine months of fatigue! Yes, surely, given the nine months of fatigue with a conflict at the end of them, and nine days rest don't appear too much; one day per month, thirty days fatigue with a small conflict to one day's rest! There is both euphony and mathematics in this method of presenting the proposition, albeit we can discover neither science nor sense. Meig's diet is "tea, bread, gruel, vegetable jellies and panada, for three or four days."

Churchill presents the following: "The patient should never leave her bed, even to have it made, before the sixth day; and if she can be persuaded to limit her exertions to this point for eight or nine days, so much the better." "Gruel, panada, etc., for three or four days, then some broth, and on the seventh or eighth day some chicken or mutton, with some wine and water." This wine and water on the seventh or eighth day is a remnant of an old practice that stimulates the puerperal woman strongly with the alcoholic spirits, from the termination of labor, under the idea that she was very much exhausted and depressed. The practice was about extinct in the day of Churchill, but he generously pays this tribute to a former prejudice. Since Churchill, no author, I believe, teaches the use of stimulants for ordinary well doing patients but all who precede him, that I have consulted, allow wine, ale, porter, or some other form of alcohol in small quantities and dilute, sometime during the puerperal state, though all condemn it in the earlier stages.

Ramsbotham orders a change of linen in an hour or an hour and a half, but the patient must "not be allowed to get out of bed, either to sit or stand; nor must she of her own accord

move hand or foot in the way of exertion." Why not at once secure her superior extremities with a straight jacket, and her inferior with gyves? What business has a woman to have a baby if she does not want to be pinioned? He permits the patient, after a week, to be laid on a sofa and have her bed made, after a fortnight she may put her feet to the "ground" and take an occasional walk about the room. He orders tea, toast, and farinaceous food for three days, some chicken or mutton broth on the fourth day, a light pudding added on the fifth; in a week allows a small quantity of solid meat, and in a fortnight "a glass of wine and water, or mild malt liquor may be taken." The delicacy of Ramsbotham is something really touching. He directs the bandage to be put on by the nurse for he "can not help thinking there is something highly indelicate in its being applied by a man." Certainly! and would it not also be best, to deliver the woman with the accoucher's hands properly gloved? Might not the possessor of such refined sensibilities receive a fatal shock through touching a woman with uncovered digits?

Ramsbotham's book was published in 1842, and we will not pursue this examination of authors farther back. We have had eight witnesses on the stand, and what a muddle their testimony makes. All agree that puerperal women, for the first day or two, should be fed on slops, or other, so called, light diet; and this is about the only point upon which they are unanimous, without it is that a puerperal woman has no natural tastes or desires that her doctor or nurse is bound to respect.

Can there be more conclusive testimony that these artificial rules are not necessary than the disagreement of the rules themselves as laid down by their several advocates. One accoucheur directs that the newly delivered woman takes a little nap, then sit up in bed and partake of some nourishment; another says she must make no exertion, move neither hand or foot for an indefinite time; a third requires her to keep in bed for four weeks at least; while most authors assert the necessity for keeping the horizontal position for eight or ten days. It is a remarkable fact that of all the women subjected to this great variety of treatment but very few perish, indeed, most of them do pretty well, everything considered. The logical inference is that the regimen prescribed in neither case is essential, but that the patient is carried through by some force not included in either prescription,

and therefore better than that in either. Let us profit by this logic.

To my apprehension Bard had the warrant of both experience and science for advising that "after one or two days women should rise from their beds, and sit up for a longer or shorter time every day, according to their strength and inclination." If I were to offer an amendment it would be to strike out "one or two days," but this would be very nearly a work of supererrogation, for it would not often happen that either strength or inclination would inspire women to rise within that time. I would, however, not only allow them to sit up, but to walk about, "according to their strength and inclination," being careful to instruct them how to estimate their strength and to measure their inclination.

After uncomplicated labor, if it has been severe and protracted, the woman is tired, exhausted and sore, and needs and will unadvised, take rest of longer or shorter duration. Under this rest she will recuperate, and in a varying period, one, three, five days, she will be able to sit up, first in bed, then in a chair, and presently to move about on her feet, beginning with a very limited effect in this direction. Now, what is there in her condition that shall properly forbid her to fulfil this instinctive desire? There must be something to determine her stay in bed, what better indication to leave it can there be than her own sense of ability coupled with willingness? Do we not know that in all other cases of exhaustion, strength and vigor come more generously and pleasantly to those who leave their bed as soon as able?

Having kept the bed recumbently until more rest and a certain amount of recuperation has given a patient a sense of ability, added to a desire, to be up, is not all further confinement a source of debility that will render the patient less able to get up each succeeding day, and make her more liable to accident when she does rise? Certainly to my mind this proposition is so consonant with the present state of medical science and observation as to challenge acquiescence on all hands upon this annunciation without special proof.

But if authors are irrational and unscientific in their teachings as to the recumbency of puerperal women, what must be said of the rules and regulations laid down by them for the diet of the same patients? How odd it sounds to hear learned and experienced men give the most positive instructions for

various beverages, all more or less non-satisfying to the thirst, when the woman, if left to herself, would take water, the natural, and only proper drink, fulfilling every indication and satisfying every want.

And the food: what is there in the philosophy of digestion and nutrition, or the pathology of them, for that matter, that will justify the endless particulars about slops, and panadas, and broths, and the soft end of oysters, etc. etc., even defining the day, numerically, upon which each shall be used, as if the condition of the stomach was, by some inscrutable law of the puerperal state, made fit for the food announced by a certain lapse of time, instead of our selecting the food to meet the indicated wants of the stomach and system.

To my mind, therefore, it is as clear as any other proposition in the whole round of medical science, that each puerperal patient should be looked at, and prescribed for, as an individual, having her own particular wants and necessities, and should not be regarded as one of a great number each of whom has precisely the same wants and necessities to be provided for, and satisfied, by a grand, comprehensive, common rule. And, furthermore, I verily believe that the accoucheur who does not allow the previous habits and present condition of his puerperal patients, together with their instinctive desires and reasonable wishes, to temper his judgment and modify his management, is not living up to his privileges nor his duty, no matter how exalted his wisdom otherwise, nor how profound his lore.

A difficulty of some magnitude in the management of puerperal women is encountered in the state of their own minds. They have been so long accustomed to hear that women in their situation require an especial regimen that many of them do not listen favorably to advice that does not run counter to the promptings of nature, and are driven to doubt the propriety of any regimen which is not unlike that for any other departure from common normality. I need not stop here to discuss the influence of the mental status over the physical organization for good or evil. Its power is great and acknowledged on all hands. Dr. W. F. Atlee, (*American Journal of Medical Sciences*, April, 1865, p. 468,) writes that "Dr. James Johnson eloquently says, 'The heathen philosopher (Pluto, I think,) may have carried the idea too far when he traced all diseases of the body to the mind, '*omnia corporis mala ab animo*,' but assuredly so far as my observation goes, and it has not been very limited, a great majority of corpo-

real disorders spring from or are aggravated by mental perturbations." For many reasons there are few states of the system where the force of these mental disturbances is more impressive than in that of women in child-bed; and those attendants will be most successful who recognize its importance and accord to it its proper weight and no more. We must be guided in giving our instructions somewhat by our patient's prejudices or preconceived opinions, but the judicious physician will always endeavor to correct, in a proper manner, whatever errors in this behalf his patients may have fallen into.

In conclusion, one may express the hope that the time will soon come when obstetric authors will give the regimen of puerperal women such considerate investigation as will enable them to present us with rules for its regulation framed in the light of more advanced medical science, and in accordance with a higher state of knowledge, abandoning the present method of treating the subject, which is, apparently, for each successive author to adopt a routine practice which shall, in some respect, differ from the routine of his predecessors. And in so doing, it appears to me, they only succeed in altering one folly by substituting or adding another folly.

TREATMENT OF GUN-SHOT INJURIES OF THE HEAD.

Dr. John Ashurst, Jr., devotes an article in the *American Journal of Medical Sciences* to the subject of "treatment of gun-shot injuries of the head." From the history of five cases recorded the following conclusions are drawn:

1. In the large number of cases which die under conservative treatment, it does not appear from the autopsies that the use of the trephine could in any way have averted the fatal issue.

2. Many cases which recover without trephining would be seriously jeopardized by rashly admitting the atmosphere to the torn and bruised cranial contents, and thus placing them in the unfavorable circumstances of an open wound, instead

of leaving them in a safer position of a sub-cutaneous, or more strictly "sub-osseous" injury.

3. In those cases which recover after the use of the trephine, the instrument does not deserve the credit of the cure; for if there be already an opening through the skull the operation is unnecessary; and if there be not, it adds to the already serious injury a most dangerous complication.

4. There is a close analogy, though often forgotten, between trephining and the resection of long bones. In compound fractures of the extremities we extract loose fragments, restore the others as nearly as possible to their proper places ("setting" the fracture,) and then trust the case to nature. Just so in compound fractures of the skull, it seems to me, we should content ourselves with removing the detached portions of bone, and restoring the rest if possible, by the elevator, or otherwise, to their proper level, and then withhold our hands; conducting the after-treatment upon physiological and rational principles. Trephining is the most serious and fatal of all resections, and I believe the day will yet come when it will be looked upon as a matter of curious and antique surgical history, rather than as an actual and established mode of surgical treatment.

ASCITES AND ITS TREATMENT.

BY WILLIAM BAKER, M. A., M. D.

Dropsies undoubtedly arise from a great variety of causes. They are frequently the mere consequence of disease in remote parts. Probably any obstruction to the circulation, whatever that may be, and whether in the large viscera, the veins, the lymphatics, may be productive of asceties; this we term symtomatic dropsy, and our success will depend upon the nature and site of the obstruction. There are many cases of ascities which we are justified in calling and treating as idiopathic. The exact causes of such dropsies is certainly not clearly indicated, but I should say it is strictly local: the heart, lungs, liver, kidneys, &c., appear perfect in structure and in function; and it is probable that the effusion is caused by some morbid condition of the peritoneum. But in the cases I

have lately witnessed I think that condition was not inflammation; there were no febrile symptoms, no tenderness or pain; the general health was not bad: the mechanical effect of the effused fluid might be blamed for all the discomfort that was experienced. The balance in secretion and absorption in dropsies is certainly destroyed, the exhalents are undoubtedly acting in excess, and the cause may be vital or structural. I have presumed it to be the latter, and strictly local, and therefore have placed much confidence in local medication, which I strongly recommend in addition to all other indicated means.

Three cases of what I will call chronic idiopathic ascites have lately fallen to my care—all strong, not unhealthy looking men, from fifty-five to sixty years of age. Two of them had led active and regular lives; the other, Mr. W——, had occasionally indulged, and committed errors in both eating and drinking: I will give some particulars of his case.

Mr. W——, aged sixty, had been aware of the gradually increasing size of his abdomen and its nature for somemonths; and in January, 1864, I found the effusion sufficiently large to have sanctioned tapping. Seven years before he had been under my care in a similar condition, and been perfectly unloaded by medical means alone; therefore, on this occasion, the former treatment was recurred to. It consisted of hydragogues, salines, with iodine, bitters, &c.; friction to the abdomen, and continued pressure; the hip-bath, of a grateful temperature, every other night. The local applications used in succession were tincture of digitalis, variously combined, mercurial liniment, and ointment of iodide of potassium.

The above means were most diligently used for three months. The hydragogues acted most abundantly, frequently unloading him to the extent of four, five and six quarts in the twenty-four hours; yet the accumulation was not lessened. In April, thinking I might gain some advantage to my treatment by tapping, four gallons of dirty-red, watery fluid were abstracted. For three weeks after tapping there was no perceptible disposition to the return of the dropsy; but in a few days more the accumulation was again evident, and, in spite of the most vigorous use of all my means, it uninteruptedly progressed. In July the distension was so great as to require a second operation, and four gallons and two pints of the same dirty-red looking fluid were removed. In a few days after this second tapping the effusion rather rapidly returned; yet the patient was comfortable, without the most trifling fever. Blisters were applied to the abdomen, the salines, the hydragogues,

&c., continued; and so soon as he had recovered from the blisters, the local application and pressure were resumed.

This plan was steadily persisted in. The hydragogues were pushed to the most warranted extent till September, when it was ascertained by the *tape* that the effusion had increased. The salines, with iodide of potassium and hydragogues, were continued, and tincture of iodine was substituted for the former local applications, the abdomen painted with it every night, the bandage to be used of every comfortable degree of tightness, and the bath as before. In October the tape showed a trifling diminution of size; the means were continued, and in November the advantage was still more evident. Every week now told in favor of the treatment, and during December the effusion was completely removed. On the 1st of January, 1865, an occasional painting was recommended, and a course of salines, aperients, and bitters to be continued for some time. Mr. W—— is now well. The other two cases, in much less time, yielded to similar treatment.

Three cases of success are certainly too scanty to establish confidence in any particular plan of medical treatment where the *post hoc* and the *propter hoc* are so difficult to define. I know not if the tincture of iodine has been used by others in the same manner. At the present time I certainly attach much importance to it and deem it worthy of trial. The plan of treatment in Mr. W——'s case was little changed throughout; the hydragogues were probably pushed to a greater extent before the painting with the tincture of iodine than after; yet it is clear that no advantage was gained over the effusion until the painting had been continued for some time, and then the reduction was so slow, but uninterruptedly progressive under its use, that I certainly am inclined to attribute the principal benefit to it. In the treatment of dropsies, the most powerful means we possess are undoubtedly hydragogues. When the strength of the patient will allow, and there is nothing to contraindicate their continued use, we can generally succeed in unloading the patient, and in rendering him at least a temporary good. The best hydragogues are colocynth with croton oil, gamboge, jalap, and cream of tartar, or elaterium and colomel variously combined. For continued use there is nothing equal to, nor as manageable as, elaterium. My dose of elaterium is one-twentieth of a grain. With this dose I invariably commence, and rarely find it necessary to carry it beyond one-tenth of a grain, in combination with minute doses of calomel, and squill pill, to which the compound genitan

mixture with sulphate of magnesia will be found a most efficient adjuvant, and may be taken with the elaterium pill every four, six or eight hours. In urgent cases of cellular dropsy, where the powers of life are almost overwhelmed by the effusion, I certainly prefer gamboge, jalap and cream of tartar. With three doses of this compound, one every four hours, I unloaded a patient of Mr. Newstead, of Budwith, of twelve quarts in the twenty-four hours.

This was a most urgent case, consequent upon taking cold, with serious organic lesion of the heart and lungs, and the hydragogues were required to be repeated twice. after suitable intervals of repose, for the full removal of the effused fluid, the result of the second administration was seven quarts; in the aggregate six gallons.

Howden, Sept. 1865.

CHINESE CUSTOMS DURING MENSTRUATION.

At a meeting of the Edinburgh Obstetrical Society, Dr. Keiller stated that a naval officer, now stationed in China, had directed his (Dr. K.'s) attention to the peculiar manner in which the Chinese women were accustomed to treat themselves during menstruation. The gentleman referred to had, in his communication, enclosed a folded sheet of soft and apparently very bibulous paper, which he stated was similar to that generally used in China instead of the ordinary cloth or napkin used by females in this country. Dr. K. read from the letter he had received the following observations regarding the matter:

"You will be much surprised and puzzled when you receive this letter and its enclosure; so I will at once clear it up. I was talking to Dr. Medows, of Ningpo, about the personal cleanliness of the Chinese being so bad, when he told me it was not so bad as I supposed, and mentioned that in one particular they were more careful than ourselves; that is, with women during their menstrual period, instead of using a cloth as European women do, they use the paper enclosed, which is folded exactly as it is in the envelope, except that I have turned down one end to make it fit the envelope. He tells me a belt is used, and a cloth to go over the paper and keep it in place. The Chinese amas (servants) to European

ladies refuse to wash the cloths which they use, and ladies therefore use the paper, and Dr. Medows tells me they prefer it. The Chinese always burn it. I do not know if such paper could be procured at home; but should you think it worth a trial in Scotland, I will be most happy to send you some, and make arrangements for your receiving a regular supply, should it be adopted to any extent, and no substitute found at home. I have troubled you with this because I believe small things contribute much to the comfort of all, and are more frequently overlooked because it is no one's business. I have so little to do of my own at present that I have to look out for some."—*Edinburgh Medical Journal.*

CLINICAL LECTURES ON DISEASES OF THE EYE.

By E. L. HOLMES, M. D., of Chicago,

Lecturer on Diseases of the Eye and Ear in Rush Medical College, and Surgeon to the Chicago Charitable Eye and Ear Infirmary.

THE ACCOMMODATION OF THE EYE FOR DISTINCT VISION AT DIFFERENT DISTANCES.

GENTLEMEN:

We enter upon the study of a very interesting series of subjects. I will ask your particular attention to this and the following Lectures, since there is comparatively little upon these subjects in your ordinary text-books. To the recent labors of Donders, Helmholz and Jaeger, we owe almost all the positive knowledge that now places this chapter of ophthalmology upon a strictly scientific basis.

The subject embraces the "accommodation" of the eye and its anomolies—Myopia, Presbyopia, Hypermetropia, Asthenopia, Astygmatism, and Paralysis and Spasm of the ciliary muscle.

I need scarcely remind you that the eye may be compared to the camera of the photographer, the cornea and other re-

fracting media corresponding to the convex object glass, and the retina to the screen of ground glass, upon which the inverted images are produced. It is well to recall to mind the fact, that rays of light do not pass straight through convex lenses, but are rendered convergent as follows: Parallel rays converge at a distance behind the lens, equal to the length of the radius of its curvature. The more divergent, within certain limits, the rays are made to fall, the further behind the lens they will be brought to a focus. The rays from very distant objects, since they are so slightly divergent that they may be regarded for all practical purposes as parallel, form images on the screen placed at a distance behind the lens equal to the radius of its curvature. The nearer the objects (within certain limits,) are placed to the lens, the more divergent the rays from these become, and consequently the further their images are formed behind the lens. The photographer therefore slides his screen towards the lens for distant objects, or from it for nearer objects, and thus "accommodates" his camera for objects at different distances. You will recollect, again, that the greater the degree of convexity a lens possesses, the more it refracts the rays of light—or in other words, the shorter the distance behind it at which parallel rays are brought to a focus. If we suppose the screen and lens of the camera placed at a suitable fixed distance from each other, absolutely distinct images could be obtained of those objects only which were situated at one certain distance before the camera. Objects nearer or further than this distance would form images respectively behind or in front of the screen, and consequently imperfect images on the screen itself By substituting, however, for the lens in the camera, those of greater convexity, for nearer objects or of less convexity, for more distant objects, distinct images may be formed on the screen. Thus there are two ways by which the photographer may "accommodate" his camera, or in other words, change its focus—either by increasing or decreasing the distance between

the lens and screen, or by substituting lenses of greater or less convexity.

I trust I shall be excused for dwelling thus long upon these simple illustrations. I think they will aid you in comprehending the subject of accommodation and the abnormal conditions of the eye, which disarrange this faculty.

The convex surfaces of the cornea and crystalline lens are the important elements in the refracting media of the eye which aid in forming images of external objects upon the retina.

It has been supposed by some physiologists that the degree of convexity of the lens as well as of the cornea was unchangeable; that the eye when looking upon distant objects was in a state of rest or relaxation; that in looking upon near objects the recti muscles so pressed upon the selerotic as to elongate the globe, thus increasing the distance between the retina and lens—as the photographer elongates his camera by removing the screen further from the lens.

This theory of accommodation is now almost wholly discarded by physiologists, for it has been shown that the recti muscles may be all paralyzed and yet the power of adjustment may remain intact.

Others have supposed that accommodation depended upon the motions of the pupil (iris,) since in looking at nearer objects the pupil contracts and the pupillary edge of the iris approaches slightly towards the cornea. This movement was supposed to draw the lens forward, thus increasing the distance between the lens and retina. It has been demonstrated however, that the iris may be torn from the eye and yet the power of accommodation be undisturbed.

It should, nevertheless, be borne in mind, that while the iris and recti muscles are in no way the essential agents of normal accommodation, they still perform their functions in true harmony with the organs of accommodation, the muscles rotating the eyes, and the iris regulating the amount of ligh

which enters the eye, and also serving as a diaphragm. We shall soon have occasion to examine the influence of the recti muscles upon the accommodation of the eye in some forms of disease.

The normal adaptation of the eye for vision at different distances is effected by changes in the form of the crystalline lens. These changes have been demonstrated by eminent physiologists in a simple manner, which may be well illustrated by a familiar experiment. If two convex lenses, one of greater and the other of less convexity, be placed at a given distance from an object, the reflected image from the more convex will be smaller than that from the less convex lens. Hence the convex surface of the cornea gives a larger image of a luminous object than the convex surface of the crystalline lens, as can be readily seen when a lighted candle is held before a normal eye. If now the head of an individual and a suitable luminous object be fixed at a proper distance from each other, by an apparatus adapted for the purpose, the length of the image on the cornea, and that on the lens may be most accurately measured by a dilicate optical instrument of peculiar construction. It is found with this instrument that, while the cornea gives an image constantly of the same length whether the eye is accommodated for near or distant objects, the lens gives a shorter image when the eye is fixed upon near than when fixed upon distant objects. Hence it follows that the crystalline lens becomes *more* or *less* convex according as the eye is fixed upon near or distant objects.

From what has already been said, you perceive that the following changes take place in the eye when fixed upon near objects: the lens is more convex—the pupil contracts—the anterior portion of the lens and the pupillary edge of the iris approach slightly towards the cornea; the two internal recti muscles slightly contract to render the axes of the eye more convergent. The reverse of these changes takes place when the eyes are fixed upon distant objects.

The changes occurring in the form of the crystalline lens,

as above described, are demonstrated beyond question. The precise manner, however, in which they are produced, is still somewhat difficult to comprehend. The ciliary muscle is now recognized by almost all authorities as the apparatus by which they are accomplished. The following explanation, although not entirely satisfactory, is, perhaps, the most rational that can be given:

An innate power of traction peculiar to the Zonula of Zinn or suspensary ligament of the lens, acting in all directions upon the periphery of the capsule of the lens, tends to increase its circumference, and consequently to flatten its convex surface, which is supposed to be the condition of rest of the organs of accommodation—the eye being thus adjusted for distant objects.

Whenever the lens is relieved from the traction of the zonula, it assumes, from its own inherent properties, a more convex form. It is a fact worthy of notice, that whenever the connection between the lens and zonula is ruptured, the lens at once becomes much more convex. After death, also, when the zonula has lost its power of traction, the lens immediately becomes more convex.

The contraction of the annular and radiating fibers of the ciliary muscle tends to shorten the width of the muscle, and to raise the ciliary processes towards the axis of the eye, thereby, as the zonula is attached to the processes, decreasing the periphery of the zonula. This removes the traction on the capsule of the lens, which at once, from its inherent tendency, assumes a more convex form, the eye thus being accommodated for near objects.

The plates which you have before you illustrate the changes in the form of the lens, and of the ciliary band in accommodation for near and for distant objects.

AN EXTREMELY DIFFICULT CASE OF MIDWIFERY.

By G. P. PAOLI, M. D., Chicago.

Presentation of the foot, arm, and umbilical cord before a very high standing segment of the head. Extraction with the forceps, of a living child. Adhesion of the placenta and extraction of the same.

On the evening of the 14th November, I was called to see a poor Swedish woman, 29 years of age, well built, who had menstruated regularly from the age of 17, and previously had been delivered of three children. Her mother had been delivered of ten children, and always with great difficulty, and like her mother, this woman's previous delivery had been very tedious, for five years ago when she was delivered of her first child she suffered a three days protracted labor, and the physician who attended her had to extract, with instruments, a dead child. She suffered from that time of a rupture of the perineum, close to the intestinum rectum. The second birth she had a year and a half ago; after two days suffering she was delivered of a full-born child, with a breach presentation. Both of the above mentioned cases commenced with an early flow of liquor amnii.

The 13th of November, early in the morning, the patient experienced a sudden flow of liquor amnii, which continued to flow in small quantities. She called for a midwife of considerable experience, but feeling rather nervous about this case, the midwife requested my attendance. On examination I found the os uteri dilated to the size of a twenty-five cent piece. Liquor amnii had disappeared, and inside of uterus I felt a hand presenting; above this a larger round but mobile part of the fœtus, which I considered a part of the head. But after the lapse of a couple of hours, when I again examined her, I could not reach anything else but a small part of an extremity which was situated high over the right os pubis, and it was impossible to determine whether it was an arm or tibia;

the rest of the pelvis seemed to be empty. The hand which I for a short time could feel in the pelvis, and the head being near the same, were facts which spoke in favor of a shoulder presentation, and the extremity which I could reach was a part of the arm; and my suspicion was still more strengthened on examination of her unequally dilated abdomen, where the broad uterus, bending to the right, seems to indicate an oblique situation of the fœtus. The palpitations of the heart of the fœtus were plainly heard below the umbilicus, about four inches in a transverse direction.

The greater part of the night she rested well; early in the morning she commenced to feel pains of a short duration. The 15th of November, at 9 o'clock, A. M., when I again examined her, the mouth of the uterus was very much contracted and swollen, that I could with difficulty introduce my finger. I was rather surprised to feel high up in the pelvis, on the right side, the toes, and back of this the outside margin of a foot, and behind this another foot, and this was all of the fœtus that I could discover. No pains appearing, the woman was quiet till 4 o'clock, P. M. On examination then I found plainly the head at the right side, and also a foot, while the margin of the other foot I could not without danger reach, and it seemed thus doubtful whether what I supposed on previous examinations to be the margin of a foot, was not the margin of a concealed hand.

A couple of hours later, regular pains appeared, and at 7 o'clock, when I repeated my examination, I found the uterus dilated to the size of a silver half dollar. Now I felt to the right of the foot a strong pulsating loop of the umbilical cord, and above this a part of a long small bone, which later proved to be the margin of ulna, and a little higher up a couple of joints of the fingers.

On the ground that the uterus was not sufficiently dilated, there was nothing to be done but to wait and observe the slowly increasing pains. During the middle of the night the pains commenced to be powerful and also very painful, and

the uterus was dilated to the size of a silver dollar, and the foot and umbilical cord outside of the orificium, and the uterus in the upper part of the vagina. High up in the frontal part of the pelvis, I plainly felt an under arm laying across, which I could follow up to the elbow joint, and behind this above the entrance of the pelvis, I felt the head and small part of its suture.

Now the image of a complicated fœtus presentation began to be clear to my mind, because it was possible that the oblique irregular shaped uterus was the cause of the oblique direction of the fœtus. When we take into consideration the rather spacious entrance of the pelvis, and that to the left laying head, which for a time was prevented from entering into the same, while earlier and so much easier the right foot, arm, and umbilical cord had an opportunity to sink down in the right side of the pelvis. As neither the arm or foot could be brought back, and the threatening danger of the fœtus spoke for an early delivery. Under these circumstances there was scarcely anything to be done but turning by the feet, and extracting the fœtus, however doubtful the prognosis might seem, so far as regards the safety of the fœtus.

In the meantime the slow dilation of the uterus and undisturbed pulsations of the umbilical cord, allowed me to delay the delivery for a short time, which I rather chose, as I cherished a faint expectation that under the increasing pains the perceptible head, which I thought was occiput, would press down so much in the entrance that I could apply the forceps, and the expectation was fully realized. After I had patiently waited an hour, the slow pulsations of the umbilical cord indicated a quick operative delivery. In the meanwhile the uterus was well dilated, and the occipital part of the head was sunken further down the entrance. In my conviction that the prognosis was more favorable both for the woman and fœtus, I then tried the application of Professor Hodges forceps, and with great care and repeated slight rota-

tions, I succeeded in applying the right branch in spite of the obstructions of the over arm and tibia.

The rest of the operation was not difficult, as the head and the under arm in front by a couple of tractions had been brought down beside the foot in the cavity of the pelvis; and by the next traction with the complete descent of the umbilical cord and arm, the head entered the outside parietes.

On examining the living child, I found the right hand and foot considerably swollen, and an impression on the right frontal bone, which testified the relative situation and pressure of the fœtus in the pelvis.

After the delivery, a sudden hemorrage appeared, which produced a very small feeble pulse with a sudden chilliness. I took such precaution as to master the hemorrage. After waiting a while for the contractions of the uterus, and subsequent expulsion of the placenta, I considered it would be judicious for the extraction of the same, as the hemorrage again appeared, and introducing my hand into the uterus, I discovered a partial adhesion of the same, and by careful manipulations, I extracted nearly the whole; the remaining part was expelled on the fifth day. On the 13th day this woman left her bed quite well.

TANNIN; ITS USE IN PRURITUS VULVA AND VAGINA.

This distressing and not infrequent affection, has been more or less elaborately treated upon in all our standard works upon gynecology, yet the intractable nature which it sometimes assumes, proving rebellious to approved medication, imperiously demands that anything capable of impressing a remedial influence upon it, should not go unmentioned, which is

my apology for proposing the addition of Tannin to the armamentarium of remedies for this disease.

There are probably few diseases more distressing than the one under consideration, causing, as it sometimes does, mental depression, nymphomania, and consequent seclusion from society. Yet in some of the most intractable cases that have ever come under my care, the tannin has effected a cure, after failure with the most approved remedies, and when the condition of the patient was pitiable in the extreme. In one intractable case of two years duration, which came under my care, after having undergone a variety of treatment from two excellent physicians, the tannin succeeded perfectly, after failure with Prof. Meig's recipe, and other standard remedies.

In idiopathic pruritus vulva and vagina, my experience would lead me to regard it as much a specific as quinia for intermittents, or sulphur for the acarus scabiei. In the symptomatic variety, its remedial agency is less decided, but far superior to that of any other agent that I have ever employed. Here, of course, the remote cause must be sought for and appropriately treated as far as practicable, be it disease of the uterus or its appendages, ascarides in the rectum, vesical irritation, or whatever it may be, lest a recurrence of the disease take place.

I usually employ the following recipe: ℞. Acidi Tannici, ʒ i.; Adepis, ℥ i. Fiat unguentum. To be applied twice or thrice daily, to the diseased surface, or as an extemporaneous prescription of a teaspoonful of powdered tannin, to a tablespoonful of lard. Should it produce smarting, which it rarely does, the strength of the recipe should be reduced.

When the disease is symptomatic of uterine disease, in addition to the local treatment advocated by our gynecologists, I can confidently recommend the following prescription as an efficient alterative: Finely ground Helonias Dioica, ℥ ii.; finely ground Cimicifuga Racemosa, ʒ i.; Senecio Aureus, ʒ i. Digest for fourteen days in a quart of good wine or

whiskey. Dose from a half to a table spoonful three times a day, preferably given after meals.

Should the patient be anemic, some chalybeate should be exhibited. Of the different chalybeate preparations, Squibbs' pyrophosphate of iron commends itself to our confidence by its solubility, almost tastelessness, and general acceptability to the stomach.

We would request the writer of the above article to send us his name and address, as we have unfortunately lost, if we have ever received them.—EDS. JOURNAL.

THE MORTON TESTIMONIAL.

Dr. William T. Morton, whose good fortune it was first publicly to demonstrate the practicability and safety of using ether as an anæsthetic agent, recently visited this city soliciting money to reimburse him for expenses he claims to have incurred in disseminating a knowledge of the discovery, and establishing the practice of using this remedy for preventing pain. Since 1846, Dr. Morton has been engaged in one unremitting struggle to secure to himself, the most ample pecuniary reward, that he hoped might flow from his connection with this felicitous discovery. From year to year, he has importuned Congress for an appropriation from the public treasury—a number of times engineering his bill through one house only to loose it in the other—until at length the fruition which before had eluded his grasp, seemed within his reach, for a bill giving to him $200,000, having passed one branch of Congress, was lost in the other, by a single vote. This defeat in the very moment of victory, was the last straw that broke the camel's back, and giving up all hope of being rewarded from the national treasury, he determined to make a

direct appeal to the people, and endeavor to obtain the $200,000 through the somewhat complex machinery of the "Morton Testimonial." The anæsthetic agents are conceded by all to be among the most precious boons that a kind Providence has bestowed on suffering mortals, and that Congress should persistently refuse to reward Dr. Morton, would seem to imply great national injustice. Our good name as a people, requires an explanation of this apparent neglect. Dr. Morton's misfortunes of which he complains, legitimately flow from his own acts. He seems to be so lacking in native dignity of character as never to have viewed the great discovery in any other than a pecuniary light. This inspired him first to attempt to keep the remedy a secret, under the name "letheon," and then to obtain for anæsthesia a patent, designed to prevent the freedom of its use. He has, too, very unjustly and unwisely attempted to suppress the claims of Wells, Jackson and Long, to any participation in the honors due to this discovery. To have spent money to secure congressional action in his behalf was folly, and if he has done so to induce the world to accept the proffered blessing, it was unnecessary. No such effort was ever made in the west, and certainly in no place was the agent more speedily or generally used than here. Indeed in no part of the world did the remedy meet sufficient opposition seriously to retard, much less to endanger its universal acceptance and approval. The final resort to a "testimonial," is a novelty—not so much in outline and substance—as in the manner of its execution. We had been accustomed to look upon such movements as the spontaneous pulsations of the popular heart, quickened by a sense of gratitude and obligation, and had supposed that the recipients of these demonstrations, if not passive observers of such movements, at least lent them only clandestine aid and encouragement. But Dr. Morton has reversed all this and boldly presents himself in the attitutude of a needy supplicant for the nation's gratitude, and specifying that it be rendered in a substantial pecuniary form.

It is painful to witness such indelicacy, and especially when it is exhibited by one who is even nominally a member of the profession of medicine, and who has indissolutely associated his name with the origin of anæsthesia. We think Congress ought to have made a generous appropriation, to be divided among those who are admitted to have been jointly instrumental in perfecting this discovery, and since it has failed to do so, there seems a propriety in individuals supplying the omission, and we are glad to know that in this manner Dr. Morton has, in the eastern cities, received munificent tokens of popular favor. But in the west, this is asked in a manner most likely to defeat its object. The germ of mendicity is found in the very dregs of the mind's endowments, and does not harmonize with the stalwart self-relying spirit of our people, and no unmaimed person can ask alms of them without, in some degree, forfeiting their respect. We know nothing of the pecuniary results of Dr. Morton's visit to this city, but should not be surprised some day to read the history of his experience here, added as a supplemental chapter to the work he published some years since, in which are narrated the trials and tribulations of a public benefactor.

ACCIDENTAL AMPUTATION OF THE TONGUE.—A boy, sitting on the shaft of a wagon, was jerked off, and his face crushed by one of the wheels. He received a compound fracture of the inferior maxilla, and the edge of the bone turning inward completely amputated the tongue at its base, with the exception of a few shreds of tissue. There was free but not troublesome hemorrhage. He gradually recovered, and when he left the hospital, his method of speech, though very confused and mumbling, was by a little trouble, intelligible.—*London Lancet.*

EDITORIAL AND MISCELLANEOUS.

COOK COUNTY HOSPITAL.

The Chicago City Hospital was taken possession of by the National government during the war, and used as an Opthalmic Hospital. The close of the war rendering it no longer necessary for this purpose, it was restored to the city government, who have transferred it to the County, and it is to be opened as a county institution under the name of the Cook County Hospital. It is a large and commodious building, and well arranged for the purposes for which it was designed, and being the only public Hospital in a county numbering more than 200,000 people, gives assurance that it will be filled with every variety of disease. The Medical and Surgical Board is composed of well known members of the profession in this city, and their appointment guarantees to the inmates of the Hospital skillful and faithful attendance. The Board is as follows :

ATTENDING SURGEONS.—George K. Amerman, M. D.; R. Bogue, M. D.; Chas. G. Smith, M. D.

CONSULTING SURGEONS.—Jos. W. Freer, M. D.; Wm. Wagner, M. D.

ATTENDING PHYSICIANS.—Thos. Bevan, M. D.; J. P. Ross, M. D.; H. W. Jones, M. D.

CONSULTING PHYSICIANS.—H. A. Johnson, M. D.; R. C. Hamill, M. D.

PATHOLOGIST.—Henry M. Lyman, M. D.

WARDEN.—Benjamin Chase.

MATRON.—Mrs. B. Chase.

PROF. BRAINARD'S VISIT TO EUROPE.

Prof. Brainard has left this city, and in the early part of January will sail from New York for Europe, where his family has been some months past. He goes for respite from the heavy professional labors from which he could not escape while here, for improved facilities for scientific investigation, to renew his association with the medical savans of the old world, and to observe what has been done and is now doing in the profession abroad. He will return in the autumn of 1866, in time to give his next course of lectures in the Rush Medical College. When he left, the class of students which he has instructed this winter, marched in procession to the train in which he took his departure, to offer to him their parting salutation, and as a token of their respect, attachment and esteem. Relating to this subject, we have received the following notice of a meeting of the class, the resolutions presented to Prof. Brainard, and his reply to the same:

CHICAGO, Dec. 29th, 1865.

At a meeting of the Students of Rush Medical College, called to consider the departure of Professor Brainard for Europe, the following resolutions were unanimously adopted:

LECTURE ROOM RUSH MEDICAL COLLEGE,
December 26th, 1865.

WHEREAS, Having been informed of the purpose of our honored President and Professor of Surgery—Dr. Brainard—to depart soon for Europe, upon a visit of scientific research, and for the restoration of his health; And whereas, the Students of Rush Medical College feel a lively interest in the welfare and prosperity of their distinguished teacher, therefore be it

Resolved, That the members of this class do hereby tender to Prof. Brainard their unfeigned regards, with their best wishes for a safe and prosperous passage to the old world, where, temporarily relieved from the arduous duties of the profession he has so long adorned, he may find such quiet and

comfort as will speedily and completely restore his health, partially deranged during his long continued services, faithfully performed, in the advancement of science.

Resolved, That while we sincerely regret the necessity of his departure before the expiration of his present collegiate term, we do cheerfully submit to our present loss, believing that the profession at large will be benefited—no little—by his dipping pens, and comparing notes with the medical savans of the east—the Philosophers of the Old World.

Resolved, That while we invoke all the pleasures and benefits to be derived from a sojourn with his trans-Atlantic friends and admirers, we do most humbly petition for the Doctor a safe and pleasant "homeward-bound," where, again arrived, he may—by the providence of God—live long to enjoy the fruits of his attainments in that profession which is proud to acknowledge him as one of its bright and leading men.

Resolved, That a copy of these proceedings be presented to Professor Brainard, and that copies be furnished THE CHICAGO MEDICAL JOURNAL and city press for publication.

JNO. W. CRAIG,
M. P. SIGWORTH,
N. T. QUALES,
G. M CHAMBERLIN,
C. F. KNAPP,
Committee on Resolutions.

Unanimously adopted.

J. B. EGBERT, *President.*

W. W. MURRAY, *Secretary.*

CHICAGO, Dec. 27th, 1865.

To Messrs. Jno. W. Craig, M. P. Sigworth, N. T. Quales, G. M. Chamberlin, C. F. Knapp,
Committee of the Class of Rush Medical College.

GENTLEMEN:

I beg you to convey to the class my heartfelt thanks for the kind and too flattering resolutions which they adopted and presented to me.

My interest in the institution with which we are all connected, is unabated, and must remain so as long as I live.

It will, therefore, be my pleasure as well as my duty, to

resume, at the commencement of the next course of lectures, my position as a teacher in Rush Medical College.

Please convey to the members of the class, gentlemen, my grateful acknowledgments for their kindness, and my warmest wishes for the welfare of each one of them. Accept, also, for yourselves, the thanks and kind wishes with which I shall ever remain,

Yours most truly,

DANIEL BRAINARD,
Pres. and Prof. of Surgery in Rush Med. College.

CAUSES OF EXEMPTION FROM MILITARY SERVICE.

Jno. R. Lewis, M. D., D. D. S., has compiled in the *Dental Cosmos*, some interesting statistics relating to the causes of exemptions from military service, from the Report of Surgeon J. H. Baxter, U. S. Volunteers, to the Provost Marshal Gen'l.

The total number examined in 1863 was 255,188, of these 95,134 were exempted.

The ratio of exemptions per 1000 agrees very nearly with those in Great Britain, France and Belgium. That for 1863 in this country being 314.02; in Great Britain, from April, 1842, to March, 1852, the ratio per 1000 was 345.; in France, 1831 to 1843 inclusive, 324.40. Although the aggregate ratio of exemptions are nearly the same in the different countries, yet the ratios of exemptions for certain diseases differ widely in this country from those in Great Britain and France. The exemptions on account of loss of teeth, for example, were in this country 20.49 per 1000, while in the other countries mentioned they were only from 7 to 9 per 1000. Exemptions on account of scrofula and syphilis in the United States was 5.16; in Great Britain, 28.52; in France, 10.5. (The

number of exemptions in this country on account of syphilis would probably be much greater should a draft be necessary a few years hence.)

From these statistics it seems the number of exemptions in 1863 were greater than in 1864.

GUN-SHOT WOUND.

Dr. G. A. Wunsick, late Assistant Surgeon U. S. Vols., reports in the New York *Medical Journal* a case of gun-shot injury of the median and internal cutaneous nerves of the right arm, which was treated unsuccessfully by dissection of the cicatrix from the nerves, and excision of a portion of them, together with subcutaneous injections of morphia.

The patient, a soldier, suffered intense pain, symptoms of trismus supervened, and amputation was resorted to eventually and the patient recovered.

[Several cases somewhat similar to this one came under our observation during the war, in some of which the ordinary means failed to afford relief. In the case of a soldier in a field hospital near Murfreesboro', Tenn., in which the injury was of the nerves of the leg, the only relief he had was when the part was immersed in cold water.] L.

NOTICE.—The Dissecting Room of Rush Medical College will be open during the months of February, March and April, 1866, under the supervision of Drs. Powell and Lackey, for the study of Practical Anatomy and Surgical Operations. Special attention will be given to the demonstration of the Nervous and Venous Systems.

CELL PATHOLOGY.

Dr. Bennett stated that a cell-pathology had naturally sprung from the cell-theory, as originally framed by its founders, Schleiden and Schwann, which had greatly extended the boundaries of medical science. The cell pathology of Virchow, however, was based upon a law he sought to establish, viz., that every cell sprang from a pre-existing cell, and that we must not transfer the seat of oval action to any point beyond the cell. This supposed law, he maintained, was opposed by so many histological facts as to be altogether untenable. He begged especially to draw attention to the origin of puss-cells, which Virchow and some of his followers had represented as originating in the interior of connective tissue corpuscles. Dr. Bennett and his pupils had frequently sought, by passing setons through the skin and muscles of animals, to observe in the inflamed tissues the appearances which had been figured in support of Virchow's views, but had never succeeded in seeing pus-cells within pre-existing cells. Henle had pointed out that the error had originated in mistaking the triangular spaces observable, on a transverse section, between the bundles of various fibrous tissues, for cells; as in these, unquestionably, puss was very likely to collect. Dr. Bennett further believed that the tendency of many cells to enlarge as the result of irritation, and to multiply themselves endogenously, as shown by himself, by Roberts, Goodsir, Redfern, and other pathologists, was another source of mistake among the younger histologists. The granules and included cells so formed were mistaken by them for those of pus, though easily separated from them. He called attention to a series of preparations (which were exhibited,) showing suppuration in inflamed eye-balls, and in pneumonic lungs, in which pus-cells might be seen in all stages of formation—originating from a coagulated molecular exudation, unconnected with any pre-existing cells whatever. In the sections of lung more especially, the fibrous tissue of the organ surrounding the air-cells might be seen to be quite healthy. In the coagulated exudation, on the other hand, the molecules might be observed at first uniformly filling up the air-vesicle; then formed into masses, varying in size from the twenty-thousandth to the one-thousandth of an inch in diameter. The latter were

sounded, and were identical with pus-corpuscles. He believed that these bodies, therefore, were formed by an aggregation of smaller particles or molecules, composed originally of the coagulated exudation. It was certain that, in the situations referred to, they did not originate in pre-existing cells, as no such cells could be seen. If, as might be supposed, they sprang from the epithelial cells lining the chambers of the eye or the air-vesicles, such cells would be seen, enlarged, and containing the pus-bodies. But his preparations and numerous examinations of the part when diseased had proved to him that no such cells were mixed with the exudation, or in any connected with the formation of pus.—*British Medical Journal.*

UMBILICAL HERNIA; SLOUGHING OF FOUR INCHES OF THE SMALL INTESTINES; COMPLETE RECOVERY.

The following case, which occurred in the practice of Dr. Nolan of Wicklow, was read by Dr. Benson, at a meeting of the Surgical Society of Ireland. James Delany, a man about 50, was admitted into Wicklow Infirmary on June 16th. He had an umbilical hernia of about a twelvemonth's standing. Eight days before admission, in struggling to hold a pig, he felt something give way at the tumor, was seized with weakness, followed by pain, and soon after had vomiting. In this state he continued for seven days, using such means as his friends suggested, till the seventh day, when the medical officer of the district was called to visit him. Seeing the state of the case, and the man being in a remote part of the district, he recommended him to be conveyed to the infirmary, to which he was brought on a car, a distance of about seven miles. Dr. Nolan saw him on the eighth day, and found a hernia at the umbilicus about the size of a largish orange, a black mass, with a line of separation forming at the base, and a blush of redness in the surrounding integuments, especially towards the left side; the pulse was weak, the countenance pale and anxious, the stomach gulping up every thing. Manual interference was out of the question. He therefore deter-

mined to leave to the adhesive process the repair of the local damage, and to allay irritation and support the patient's strength, ordering a grain of opium every fourth hour till the vomiting ceased; beef-tea, and brandy and water in small quantities, and a linseed meal poultice over the tumor. Next day he had slept well, and was free from pain; the vomiting had ceased after the second pill. The opium was discontinued. The beef-tea, etc., had remained on the stomach; the countenance and pulse were improved; the whole of the integuments had sloughed away, disclosing between three and four inches of small intestine completely disorganized and ready to slough, which it did in two days after, followed by a discharge of bilious curdy fluid. The treatment from this time consisted of giving as much beef-tea and brandy and water as he could take, and throwing up an enema daily of strained gruel and milk, which was generally retained till next day. In about a week the opening began gradually to contract; in a fortnight it had closed; the man daily improved in health and strength, the bowels acted naturally when the enemata discontinued, and he was enabled to leave the hospital on July 22d, a month and five days from his admission.—*Dublin Medical Press.*

ELIMINATION OF MEDICAL AGENTS FROM THE BODY.

"MM. Bergeon and Lemaitre have lately made some observations on the elimination of medical substances with the sweat. (*Arch. Génér.*) The patients were placed in a dry chamber, where the temperature could be raised to 60° and 65° Cent. The sweat was then allowed to drain off; and as much as from 40 to 60 *grammes* could be collected in this way. They found that the arsenites of potass and soda were eliminated as such. The arsenite of iron was decomposed, the iron passing away with the urine, and the arsenic as an alkaline with the sweat. The protiodide of mercury was eliminated as a bichloride; traces of mercury were found in the sweat; and the iodine was discovered in the saliva and in the urine. Bichloride of mercury was also found in the sweat and in the urine. Iodide of potassium was found in the saliva and in the urine, but not in the sweat. In two cases of albuminuria, albumen was not found in the sweat. A small quantity of sweat, collected from a diabetic patient, contained a large quantity of sugar."

DEATH OF WM. LYMAN, M. D., OF ROCKFORD, ILL.

Pursusant to a call, the members of the Medical Profession of the city of Rockford, met on the 21st inst., and unanimously adopted the following preamble and resolutions:

WHEREAS, By the dispensation of Providence, Dr. WM. LYMAN has been called from time to eternity; therefore,

Resolved, That by the death of Dr. Lyman, the Medical Profession has been bereft of one of its most devoted and noble members; society of a true friend and benefactor; his family of a loving and large hearted protector; and we, his professional associates, of a friend, who, by his uniform kindness of heart and geniality of manner, has won our esteem and respect.

Resolved, That we extend to the family of the deceased our sympathy for their bereavement, and that we attend the funeral in a body.

Resolved, That a copy of these resolutions be transmitted by the Secretary to the bereaved family, and copies for publication to the Chicago MEDICAL JOURNAL, Chicago *Medical Examiner*, and the Rockford *Register*.

HENRY STRONG, M. D., Chairman,
G. W. ROHR, M. D., Secretary.

OBITUARY RECORD.

Died, at New Orleans, on the 8th of September last, J. L. RIDDLE, M. D., Professor of Chemistry in the University of Louisiana.

Died, in Paris, Oct., 1865, of cerebral apoplexy, Prof. J. F. MALGAIGNE, one of the most eminent, learned and eloquent surgeons and teachers of the French capital.

Died, in London, Nov. 2d, age 66, JOHN LINDLEY, M. D., F. R. S., Professor of Botany at University College, London.

Died, in Paris, of cholera, Dr. BREARD, aged 64 years.

TWENTY-THIRD

ANNUAL ANNOUNCEMENT

OF

Rush Medical College

CHICAGO, ILLINOIS,

FOR THE

SESSION OF 1865-66,

WITH

CATALOGUE OF PREVIOUS SESSION.

AND

ALUMNI OF THE COLLEGE.

CHICAGO:
JOHN C. W. BAILEY, BOOK AND JOB PRINTER, 164 CLARK STREET.

1865.

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RUSH MEDICAL COLLEGE,

Nos. 77 and 79 N. Dearborn St., cor. of Indiana,

CHICAGO, ILLS.

CIRCULAR, FOR 1865-6.

The Twenty-Third Annual Session of this Institution will open on Wednesday, October 4th, 1865, and continue therefrom, uninterruptedly, sixteen weeks.

The public general Introductory Address will be delivered in the lower Lecture-Room of the College at 8 o'clock P. M., and the regular course of Lectures will commence the next morning at 9 o'clock.

The confidence reposed in Rush Medical College, by the Profession, is evinced by the prosperity which has attended its history. By reference to the annexed Catalogue, it will be seen that the last session numbered the largest medical class ever convened in this city, and the Trustees and Faculty pledge themselves to renewed exertions to merit a continuance of this confidence and patronage.

The means of illustration in the several departments are ample, and the course of instruction is thorough and complete.

For practical Anatomy, the supply of *materiel* is abundant, and is furnished to the student at a low rate.

The Professor of Physiology will, as heretofore, illustrate his department by *vivisections*, which have proved so essential to successful researches in this interesting branch. In all practicable cases, the experiments upon which the principles of physiology are based will be performed before the class, and no pains will be spared to thoroughly ground the student in the fundamental facts of this most important part of the medical course.

Private classes will be formed during this as in previous sessions, for those desiring special instruction in particular branches, under the direction of members of the Faculty.

The Clinical advantages of the College are varied and extensive. Over three thousand patients are annually treated at the College Dispensary, which affords to the class a large amount of interesting material for Clinical observations.

The Marine Hospital will be accessible to the class.

The Chicago Eye and Ear Infirmary, in charge of Dr. Holmes, and the Desmarre's Eye and Ear Government Hospital, in charge of Dr. Hildreth, will be open to students, giving them an opportunity to observe the nature and treatment of a great variety of affections of these important organs.

Dr. Holmes, of the Infirmary, and Dr. Hildreth, of the Hospital, will give Clinical instruction to the class, in what relates to this branch.

Saturday of every week is devoted to Surgical operations and Clinical instruction, at which time, indigent persons, who require advice or surgical operations, are attended gratuitously, if they present themselves before the class.

The advantages derived from these cliniques, consist in the opportunity of witnessing a great variety of surgical operations, and numerous medical cases, and the treatment proper for each. From these clinical lectures and operations, occupying usually from three to four hours every Saturday, the students derive a great amount of varied practical knowledge.

Students, upon arriving in the city, may call on the Treasurer, Dr. Ingals, at his office, 190 Clark street, or any member of the Faculty, who will give them any needed information as to board, books, lectures, rooms, etc. Any one desiring information, by letter will please address the Secretary, Dr. DeLaskie Miller, P. O. Drawer 5787.

TEXT BOOKS, ETC.

Students will find a good assortment of medical books and surgical instruments in this city. The following text books, among others, are recommended:

Anatomy.—Gray, Wilson.
Physiology.—Dalton, Draper, Carpenter.
Materia Medica.—Stille, Wood, U. S. Dispensatory.
Medical Jurisprudence.—Taylor, Beck, Wharton & Stille.
Chemistry.—Fowne, Stockhardt.
Obstetrics.—Hodge, Cazeau, Bedford, Churchill.
Diseases of Women.—Scanzoni, West.
Diseases of Children.—Condie, West, Tanner.
Surgery.—Erichsen, Chelius.
Practice of Medicine.—Wood, Watson. *Reference.*—Bennett's Clin. Med., Flint, or Walshe, on the Heart, Walshe on the Lungs, Habershon on the Alimentary Canal, Wilson on the Skin, DaCosta or Barclay on Diagnosis, Dickson, Barlow, Maxson, Chambers, Rokitansky, Jones and Sieveking; Hammond, Military Hygiene.
Surgical Anatomy.—Maclise.
Microscopic Anatomy.—Todd and Bowman, Queckett.
Surgical Pathology.—Paget.

REQUIREMENTS OF GRADUATION.

The following are the requirements for the degree of Doctor of Medicine, viz.:

1st. The candidate must be twenty-one years of age, and give satisfactory evidence of possessing a good moral character.

2d. He must have pursued the study of medicine three years, and attended at least two courses of Lectures, one of which must have been in this institution. Four years of regular and continued practice will be considered equivalent to one course of Lectures.

3d. He must have attended Clinical Instruction during, at least, one college term.

4th. He must have taken one course of Practical Anatomy.

5th. He must notify the Secretary of the Faculty of his intention to become a candidate, and deliver to him a thesis on some medical subject, written by himself, on or before the 15th of January, and at the same time deposit the graduation fee, which, together with the thesis, will be returned to him in case of withdrawal or rejection.

6th. Every candidate must undergo a full and satisfactory examination on all branches taught in the college, such examinations being made by each Professor separately.

7th. Graduates of other respectable schools of medicine will be entitled to an *ad eundem* degree, by passing a satisfactory examination, paying the graduation fee, and giving evidence of a good *moral and professional* character.

FEES.

Lecture Fees, for the Course	$40 00
Matriculation Fee	5 00
Dissecting Ticket	5 00
Hospital Tickets	5 00
Graduation Fee	20 00

The Alumni of this, and the graduates of other respectable colleges, will be permitted to attend the whole or any part of the course of lectures, by calling on the Secretary and procuring the Matriculation ticket.

BOARD AND ROOMS.

Good board, with rooms and all the usual accommodations, can be obtained in this city at as reasonable rates as in any part of the country. By associating in clubs, students have, during previous sessions, been enabled to supply themselves with good accommodations at a material reduction from ordinary rates.

CATALOGUE OF STUDENTS.

Allen Geo. W.,.....*Ky.*
Adkins J. C.,.....*Ind.*
Annis T. E.,.....*Ills.*
Atwood E. R.,.....*Ills.*
Armstrong Joseph.....*Ills.*
Allen R. M.,.....*Ills.*
Abel Wm.,.....*Ills.*
Allen H.,.....*Ills.*
Allen C J.,.....*Ills.*
Allen Ethan P.,.....*Ills.*
Adams J. M. C.,.....*Ind.*
Adair Wm. R.,.....*Iowa.*
Amos Enos,.....*West Va.*
Andrews Gordon, M. D.,.....*Wis.*
Austin John W.,.....*Ind.*
Abers Henry K., M. D., ...*Ohio.*
Alvord Horace G.,.....*Ohio.*
Arnold B. W.,.....*Ind.*
Blanchard James G.,.....*Ills.*
Becker Wm.,.....*Kansas.*
Brown Isaac W.,.....*Wis.*
Ballinger J. W., ...*Ills.*
Burch J. M.,..... "
Burner S. A.,..... "
Bowman W. E.,..... "
Balch James H.,.....*Iowa.*
Bartholomew H. A.,.....*Mich.*
Bragg L. Y.,.....*Mo.*
Boardman J. G.,.....*Ills.*
Ball Z.,.....*Ind.*
Blackall C. R.,.....*Ills.*
Bland A. V.,.....*Ind.*
Bosley Dan'l W.,.....*N. Y.*
Brown Wm.,.....*Ind.*
Brierly Conaut,.....*Cal.*
Bond E. J.,.....*Wis.*
Brunk Chas. H.,.....*Ills.*
Bright Wm. H.,.....*Ind.*
Baird W. C.,.....*Mo.*
Bateman S.,.....*Ills.*
Bishop E., M. D.,.....*Wis.*
Barker Newton,.....*Wis.*
Baker Martim, M. D.,.....*Cal.*
Baker Braxton,.....*Ind.*
Chesbrough H. F.,.....*Ills.*
Cotton John.....*Ind.*
Clark Wesley,.....*Ills.*
Cole Sam'l, Jr.,..... "
Clarke G. A.,.....*Wis.*
Conley Wm. J.,.....*Wis.*
Coover D. M.,.....*Ind.*
Catlin E. P.,.....*Ills.*
Covert G. W.,.....*Kansas.*
Cushing Clinton,.....*Ills.*
Cole F., ... "
Conley J. N., M. D.,.....*Ind.*
Cloyd J. P.,.....*Ills.*
Chamberlin Wm. E.,.....*Ohio.*
Cook David, ...*Ills.*
Crawford J. N.,.....*Iowa.*
Crowder Wm. L.,..... "
Clark Horace N.,.....*Ills.*
Conley J. G., M. D.,.....*Wis.*
Crosswait P. R.,.....*Iowa.*
Carlisle Chas. H.,.....*Ills.*
Clouser John ..... "
Cavins Wm.,..... "
Comstock James, ...*Ind.*
Chamberlain Elston, M. D.,.....*Ills.*
Cameron D. M.,.....*Ills.*
Congdon J. S.,.....*Ind.*
Coleman O. D., M. D.,.....*Wis.*
Cook J. A., M. D.,.....*Ills.*
Cooper E. H.,.....*Tenn.*
Delap W. H.,.....*Ills.*
Dunham J. N..... "
Drummond Andrew,..... "
Douglass A. C.,..... "
Dunn Wm.,..... "
Darrah A. T.,..... "
Davison S. A., ... "
Durgin J. F., M. D.,.....*M.*
Dodd S. W.,.....*Ills.*
Dubler W. H., M. D.,..... "
Denny D. W. C., M. D.,.....*Ind.*
Dowler M. M.,.....*Ills.*
Edger Robert S.,.....*Ills.*
Elder S. S.,..... "
Ehle A. S.,.....*Wis.*
Eidson Andrew J.,.....*Ills.*
Eaton H. F.,.....*Mich.*
Foster J. H.,.....*Iowa.*
Folger Henry A.,.....*Ills.*
Ferrin S. A.,.....*Wis.*
Fitch C. M., M. D.,.....*Ills.*
Fonda David B.,..... "
Fitch Julius S., ... "
Ford O. D.,.....*Mich.*

Ferguson Smith T.,.....*Ills.*
Fowler H. R.,..... "
Fenn Curtis T.,..... "
Fuller Rinaldo H.,..... "
Fox Loftus L.,..... *Wis.*
Grissom Thos. L.,.....*Ills.*
Gill C. Judd, ... "
Galloway Sam'l,..... "
Godfrey Henry T.,..... "
Gregory W. M.,..... "
Gaskill R. R.,.....*Wis.*
Gueren J.,.....*Ills.*
Hayden Chas. N.,.....*Mich.*
Harrah John M.,.....*Ills.*
Haynes Baxter, ... "
Hall J. T.,.....*Ind.*
Herndon A. P.,..... *Mo.*
Holliday Francis A.,..... *Ills.*
Hiett F. M.,.....*Ind.*
Hurd Henry M.,.....*Ills.*
Herdman J. W.,..... *Mo.*
Henry A. F.,.....*Ind.*
Huff Joseph E.,.....*Ills.*
Hobson Edward B.,..... "
Haywood C.,..... "
Hess Wm. H.,..... "
Hess Smith H.,..... "
Horton H. E.,..... *Mo*
Holmes J. H.,.....*Ind.*
Holmes J. A., Jr.,.....*Ills.*
Hance Thos. C.,..... "
Higgins Carter B.,..... *Ind.*
Hazzard Wm. B., ...*Vt.*
Hayward J. M.,.....*Ills.*
Hampson Joseph,..... "
Johnston David R.,.....*Ind.*
Jones M. S.,..... *Ills.*
Jouer John N.,.....*Ind.*
James Geo. W.,.....*Mo.*
Kester John R., ...*Ills.*
Keiper Geo. F.,..... *Ind.*
King W. H. H.,.....*Ills.*
Kelsey Wm. J.,.....*Mich.*
Kerr Charles,..... *Ills.*
Kite John L.,.....*Pa.*
Kidder Wm. C., ... *Ills.*
Killeen Thos.,..... "
Kuester C E.,.....*Ind.*
Knapp Cyrus F.,.....*Ills.*
Kester J. H.,..... "
Lamon C. E., ... "
Livingston H. F.,.....*Iowa.*
Lyons Wm. B.,.....*Ind.*
Lyons Geo. F.,.. ..... "
Lueck A. W.,.....*Wis.*
Leal James H.,.....*Ills.*
Littlefield H. R.,..... "
Long R. W.,.....*Ind.*
Logan A. R ....*Iowa.*
Logier Wm.,.....*Kansas.*
Lucas Charles J.,.....*Ills.*
Laflen Wm. A.,..... "
Lang P. T.,..... "
Lee Josiah,..... "
Loop Truman E.,.....*Wis.*
Lewis C. J., ...*Ills.*
Landreth J. O.,..... "
Morse Fredrick D.,..... "
Massman John,..... "
Miller Wm. K.,..... "
Meacham J. Wilber,..... "
McAlpin Persey M. D.,..... "
Macdonald Peter S., M. D.,..... "
McDowell John R. ..... "
McAllister E. W., ...*Ind.*
Morgan Frank, ...*Ills.*
Morse E. A.,..... "
McAllister A. W.,.....*Mo.*
McNary C. B.,.....*Ind.*
Metcalf Edwin T.,.....*Ills.*
Meacham J G.,.....*Wis.*
Mower Lyman,.. ..... *Ills.*
Magelssen J. W., ...*Wis.*
Maxwell S. C.... .....*Ind.*
Mosteller Edward,.....*Ills.*
Morrow L. B.,.....*Minn.*
Muller J.,.....*Ills.*
Mahan Isaac L.,.....*Ind.*
McDonald Thos T.,..... "
Morse W. A.,..... .....*Iowa.*
Morley Geo ,.....*Ind.*
Maxson G. D.,..... ....*Oregon.*
Marsh G. A.,..... .....*Mich.*
Nesmeth M. W.,.....*Ills.*
Nally Patrick,..... "
Newell W M.,..... "
Otto Joseph,. ..... "
Osborn John A.,.....*Ind.*
Pendegast, N. R., M. D.,.....*Mich.*
Parker Thos W.,.....*Ills.*
Powell J. W.,.....*Ind.*
Piatt Wm. C., M. D.,..... "
Priest G. W .....*Mo.*
Penfield Wm. P.,.....*Ills.*
Prescott Joel,..... "
Paddock F. S.,..... "
Peters John H., ... "
Prentiss J. L., ... *Kansas.*
Perry Thornton F.,.....*Ills.*
Putnam W B.,.....*Vt.*
Quales Niles T., ...*Ills.*
Quire Charles E.,.....*Ind.*
Quinlan C. H.,.....*Ills.*
Rogers Walton,..... "

Rutledge W. D., ... *Ills.*
Rice Chas E, ... "
Rowley A. A., ... *Wis.*
Redmon Lafayette, ... *Min.*
Rodman A. J., ... *Ills.*
Ray Robt. B., M. D. ..... "
Reed C. B., ... "
Rush B. H., ... *Iowa.*
Rodenight Henry C., ... *Mich.*
Rice J. S., M. D., ... *Kansas.*
Smythe G. A., ... *Ind.*
Scheppers D. J. A., ... *Ills.*
Sprague Chas. C., ... "
Stewart Wm. H., ... *Ind.*
Smith W. H. H., ... *Mo.*
Sigworth M. P., ... *Iowa.*
Stevenson G. A., ... *Ind.*
Shurtleff Flavel, ... *Ills.*
Shepard J. L., ... *Wis.*
Smith Asbery E., ... "
Smith Cyrus, ... *Minn.*
Sheets J. M., ... *Ills.*
Stratton D. H., ... *Ind.*
Sommers Henry C., ... "
Sherman Emery, ... *Wis.*
Stahl Moses, ... *Ind.*
Stannard Samuel S., ... *Mo.*
Stewart John W, ... *Ind.*
Tenbright Ezra T., M. D., ... *Mich.*
Thwing F. J., ... *Ills.*
True Chas L., ... *Wis.*
Tombocken Henry, ... *Ills.*
Trueworthy John, ... *Ills.*
Thorp E. L., ... "
Trousdale J. L., ... *Wis.*
Unangst W. B., ... *Ills.*
Utley Judson, ... "
Van Zandt Geo. W., ... "
Van Buren E., Jr., ... "
Van Buren H., ... "
Wiensenried Jacob ..... *Iowa.*
Withers Horatio B., ... *Ills.*
Wesscher J. H., ... "
Welch Thomas V., ... "
Walker J. B., M. D., ... "
Wilson Joseph H., ... *Iowa.*
Willing A. J., ... *Ills.*
Wren D. B., M. D., ... *Ohio.*
Wadsack Wm. ..... *Ills.*
Waggenseller Albert E., ... "
Wales Austin, ... "
Ward Francis A., ... *Mich.*
Wilder E. S., ... *Ills.*
Woolwich N. C., ... *Mich.*
Wooster Rodman Y., ... *Ills.*
Wright O. P. B., ... *Wis.*
Washburn I. B., M D., ... *Ind.*
Williamson J., M. D., ... *Iowa.*
West Theodore H., ... *Ills.*
Wetmore R. B., ... "
Watson F. W., ... "
Wild Theodore, ... "
Young Charles, ... *Mo.*
Young Amos T., M. D. ..... *Mich.*

SUMMARY.

Illinois	147	Vermont	2
Indiana	43	West Virginia	1
Wisconsin	23	Oregon	1
Iowa	14	Pennsylvania	1
Michigan	12	Tennessee	1
Missouri	11	Maine	1
Kansas	6	New York	1
Ohio	5	Kentucky	1
Minnesota	4		
California	2	Total	276

GRADUATES

OF

RUSH MEDICAL COLLEGE,

SINCE ITS ORGANIZATION.

Session 1843-44.

Wm. Butterfield.

Thomas P. Whipple, } Honorary Degree.
John McLean, }

Session 1844-45.

Alfred E. Ames.
William Fosdick.
Edwin R. Long.
Ira E. Oatman.
Josiah B. Herrick.
Almon W. King.
Samuel W. Ritchey.
Nehemiah Sherman.
Stephen Munroe, Jr.
Isaac Watts Garvin.
Arnold H. Neadham.

Session 1845-46.

Elwood Andrew.
J. Herman Bird.
Daniel K. Haya.
James M. Higby.
Newton P. Holden.
Alexander B. Malcolm.
Cicero Robbe.
Halsey Rosenkrans.
Robert Scott.
William W. Welch.

W. G. Montgomery, M. D., Honorary.

Session 1846-47.

H. I. E. Balch.
S. A. Barry.
I. R. Bradway.
Joseph Blount.
M. B. Elgin.
A. V. Gilbert.
Fred. E. Hagemann.
H. P. Hernes.
Ephraim Ingals.
Philip Kirwin.
Leonard L. Lake.
Lafayette W. Lowell.
E. A. Gilbert.
Wesley Pierce.
Isaac Snyder.
James F. Saunders.
J. C. Leary.
David J. Peck.
J. E. McGirr.

Samuel Grimes, M. D., Honorary.

Session 1847-48.

Daniel M. Camerer.
Wm. Chamberlain.
J. A. Clark.
A. B. Crawford.
Milton D. Darmell.
Uri P. Golliday.
R. S. Hawley.
I. C. H. Hobbs.
E. G. Hough.
G. J. Huey.
Ambrose Jones.
C. W. Knott.
J. C. Lovejoy.
Sample Loftin.
William Matthews.
Thomas C. Moor.
I. H. McNutt.
John Newton.
John Nutt.
O. C. Otis.
I. G. Osborn.
J. Pearson.
A. Reynolds.
W. W. Sedgwick.
Warren M. Sweetland.
R. R. Stone.
James P. Tucker.
C. C. Warner.
L. W. Warren.
Charles Ware.

E. S. Kimberly, Honorary.

Session 1848-49.

A. W. Armstrong.
W. W. Cunerly.
Asa Clark.
Harvey Cutler.
J. W. Freer.
C. C. Garritt.
J. G. Hadem.
G. M. Higgins.
C. B. Lake.
R. P. Lamb.
C. T. Maxson.
P. B. McKay.
E. G. Meek.
G. C. Paraman.
I. C. Patterson.
C. H. Richings.
John H. Warren.
Jerome F. Weeks.
Wm. H. Wells.

Thomas Hall, Honorary. | James H. Bird, Honorary.

Session 1849-50.

Joseph L. Anderson
Clay Brown.
Cyrus G. Blood.
Henry S. Brown.
Willard F. Coleman.
Kimball Favon.
Edward J. French.
John Gregory.
Isaiah P. Hamilton.
S. Rush Haven.
George Higgins.
Anson C. Hoyt.
Alexander Hull.
Franklin B. Ives.
M. Lewis Klepper.
Thomas G. Klepper.
James C. Macon.
Alonzo L. McArthur.
Manley Miles, Jr.
Risdon C. Moore.
Wm. C. Outman.
Silas S. Parkhurst.
Wm. I. Paugh.
John M. Phipps.
Wm. W. Perry.
Giles P. Ransom.
David Rogers.
Isiah R. Snelling.
John W. Spalding.
R. G. Stephens.
Ben F. Stephenson.
Edwin Stewart.
Isaac E. Thayer.
John M. Todd.
Henry D. C. Tuttle.
Harmon Wasson.
Jas. P. Walker.
George S. Wheeler.
Zachariah H. Whitmire.
Thomas Wilkins.
Wm. W. R. Woodbury.
James R. Zearing.
Thomas D. Brown.

James S. Whitmire, *ad eundem.* | E. E. Cooper, Honorary.

Session 1850-51.

A. M. Johnson
C. J. Hull
J. C. Hinsey
V. P. Kennedy
Wm. W. Sweeney
B. O. Reynolds
John Walker
T. S. Loomis
Wm. M. Crowder
R. Morris
J. H. Murphy
A. M. Thorne
L. A Mease
G. Chittock
Edwin Wright
S. T. Trowbridge
W. C. Donaldson
E. F. Spotswood
H. E. Luther
S. R. Mason
L. L. Craig
F. W. Coolidge
L. D. Latimer
L. J. Constant
J. P. Porter
L. C. Pomeroy
O. D. Coleman
G. C. Merrick
C. Van Doren
G. S. Crawford

James S. Russell, *ad eundem.*

Session 1851-52.

W. H. Davis,
Alexander DeArmond,
E. M. Light,
H. C. Jones,
W. H. Hobbie,
A. H. Knapp,
Hugh Marshall,
J. D. Woodworth,
E. Van Fossen,
A. S. St. Luce Lindsfelt,
A. B. Chadwick.
J. H. Collins,
M. G. Parker,
J. H. Reeder,
S. C. Gillett,
H. A. Johnson,
I. P. Linn,
G. Adolph Rodenstab,
O. S. Johnson,
F. Blades,
T. G. Cole,
W. C. Hunt,
G. J. Bentley,
E. R. Willard,
L. D. Martin,
W. R. Godfrey,
W. D. Craig,
F. M. Crouse,
M. M. Hooton,
G. W. Albin,
J. M. Youmans,
Dudley Rogers,
B. T. Buckley,
H. D. Adams,
L. Tompkins,
V. L. Hurlbut,
John Garrison,

Session 1852-53.

James F. Cravens,
James F. Marrh,
David H. Spickler,
Charles Hammel,
John J. Lake,
Benjamin Wilson,
Joseph T. Miller,
Matthew H. Bounel,
Edward A. Wilcox,
Adam M. D. Hughes,
Joseph Blodgett Paul,
Edward Fortesk Hubbard
Samuel Higinbotham,
Philip J. Wardner,
Edwin Powell,
Lafayette H Smith,
Absalom W. Adair,
Thompson David Fisher,
Alonzo Hamden Kimber,
Dewitt Clinton Bennett,
John Carruthers Lowrie,
Thomas Allen Graham,
Geo. Wm. Wilkinson,
Joseph P. Terrell,
Stephen Littell Urmston,
Thomas Barnes Dever,
Nathan Oliver Pearson,
Lewis Durley Dunn,
Wm. Marion Hall,
Joseph Locke Phillips,
J. Sumner Bowen,
Wm. Fillets Vermilion,
Thomas Jeff. Shreve,
Benjamin Woodward,
John Harter Tyler,
James McCleery,
Francis W. White,
C. Hill,
Ethan McAferty,
Lafayette Grey,
Benjamin F. White,
J. W. York.

William Long, Honorary. | H. Noble, Honorary.

Session 1853-54.

Thos. Davis Fitch,
Reuben Sears,
Stephen P. Yeomans,
Myron Winslow Robbins,
John F. Hamilton,
Harvy C. Morey.
Washington Brenton,
Roscoe L. Hale,
Sidney B. Morrison,
John Thos. Mayfield,
Charles D. Watson,
John Woods Lynch,
Wm. Baker Swisher,
Albert Boomer,
Simeon Pliney Root,
Joseph W. Edwards,
Joseph N. B. Elliott,
Edward Hopkins,
Wm. Manson,
Enos P. Wood,
William Watson,
George W. Slack,
Thos. Perry Seller,
David Whitmire,
M. W. Fish.
Richard S. Hallock,
John N. Niglas,
Wm. M. Avery,
John W. Collver,
Henry W. Mann,
Anderson W. King,
Wm. A. Hillis,
Hezekiah Fisk,
Chas. C. Cornett,
Isaac Newton Davis,
Charles W. Davis,
R. M. McArthur,

Session 1854-55.

Christopher Goodbrake
Homer C. Rowson
Thomas R Hanna
Horace C Clapp
Leroy H. Kennedy
Freeborn F. Hoyt
George J. Goldsbury
Wm. Van Nuys
James Ford
Martin Wiley
John McHugh
Henry Van Meter
Elias Wenger
Ross W. Pierce
Michael R. Chadwick
Thaddeus M. Crombie
M. Davis
Berry W. Cooper
Isaac Rice
Hugh Russell
Charles Wm. Jenks
C. L. Hutchinson
John F McCarthy
John W. Trabue
Hiram L. Coon
Hiram J. VanWinkle
Elisha G. Horton
Solomon S. Clark
Vernon Gould
Wm. H. Heller
Jassen S. Conley
James Evans
Darwin DuBois
Lewis C. Bicknell
Charles Gorham
James C. McMurtny
James F. Grove
Jesse Barber
James M. Sudduth
Z. C. Rowson
George C Byrns

Session 1855-56.

John R. Robson,
Francis Ronalds,
Horace Wardner,
Thomas C. McGee,
Robert Winton,
Edwin Gaylord,
William H. Phillips,
James P. Graham,
J. N. Higgins,
William F. Green,
James W. Green,
James L. Crain,
A. Jackson Crain,
Zephaniah H. Madden,
Lucian L. Leeds,
Benjamin G. Neal,
Benjamin S. Lewis,
David La Count,
Wm. A. Gordon,
Edward W. Boothe,
David T. Kyner,
Francis M. Constant,
John E. Deming,
Samuel Griffith,
Robert S. Hitt,
Hamilton C. Daniels,
D. McMillan Marshall,
Joseph M. Williamson,
A. B. Cary,
Alexander A Lodge,
Meredith C. Archer,
J. Milton Barlow,
Roswell Eaton,
Daniel Bowers,
John J. Everhard,
George W. Kittell,
John W. F. Clawges,
Henry W. Kreider,
Bailey Regon,
David W. Carley,
Lee Smith,
Almond C. Buffam.

M. M. Latta, Honorary. | Joseph Henderson, *ad eundem.*

Session 1856-57.

N. O. Pearson
B. Wilson
D. H. Spickler
Samuel Higinbotham
J. T. Miller
E. McAferty
L. D. Dunn
J. C. Lowrie
J. S. Bowen
M. H. Bonnell
J. L. Phillips
G. W. Wilkinson
E. A. Wilcox
J. J. Shreves
T. D. Fisher
B. F. White
J. H. Tyler
T. B. Dever
A. W. Adair
W. Long
J. P. Terrell
W. F. Vermillion
W. M. Hall
S. L. Nunston
C. Hill
L. H. Smith
B. Woodward
D. C. Bennett
T. A. Graham
P. J. Wardner
A. L. Kimber
Edwin Powell
Charles Hamill
E. F. Hubbard
J. J. Luke
Lafayette F. Gray
F. W. White
J. B. Paul
J. F. Marrh
J. F. Cravens
J. McClery
A. M. D. Hughes

J. W. York, *ad eundem.*

Session 1857-58.

J. D. Gray	B. F. Swafford	J. B. Wilson
L. D. Smedley	J. L. Patten	J. B. Earl
J. R. Webster	L. B. Brown	W. B. Harl
C. V. Snow	Freeman Clark	William M. Rockwell
J. N. Green	L. Brookhart	Benjamin Dunham
Allen Heavenridge	A. J. Miller	J. S. Dashley
W. Somers	T. C. Jennings	John O'Conners
R. C. Black	B. F. Ross	J. Slack
C. J. Regan	B. F. Keith	Thomas Winston
D. B. Montgomery	S. B. Davis	R. McGee
Owen Wright	J. T. Pearman	P. Corcoran
O. R. Ormsby	D. E. Evans	C. N. Ellinwood
E. York	Willis Lilley	

1858-59.

George W. Corey,	J. H. Frizell,	Lafayette Lake,
E. O. F. Roler,	J. W. Lawrence,	E. L. Welling,
N. M. Douthitt,	J. F. Williams,	Samuel McNair,
A. B. Taylor,	E. A. Steele,	Wm. Earl Peters,
B. W. Bristow,	John A. Cook,	A. M. Blackman,
J. H. Wiley,	Blixton Harris,	E. C. Dickinson,
L. Grant Armstrong,	J. R. Conklin,	R. McGee,
Wm. L. Kreider,	F. Mason,	R. F. Williams,
E. H. Ayers,	Myron Underwood,	Samuel M. Mitchell,
P. R. Slingsby,	Joseph R. Pierce,	W. C. Hopwood.
W. H. Lyford,	Richard Hull,	

J. Drake Harper, M. D., *ad eundem.* | Samuel M. Mitchell, Honorary.

1859-60.

Orson B. Adams,	John B. Felker,	Wm. F. Osborn,
John J. M. Angear,	A. M. Golliday,	George W. Richards,
John T. Billington,	Jethro A. Hatch,	Edward Thomas,
Frederic Bartels,	Daniel Kirkpatrick,	James Thompson,
John B. Baker,	Thomas J. Fritz,	Vincent S. Thompson,
Edward L. H. Barr,	John Dancer,	J. S. Underwood,
Hiram Carnahan,	Leigh R. Holmead,	Wm. V. Wiles,
John McDamron	M. A. Isaac,	Calvin Wheeler,
Henry Durham	Wm. Irwin,	Samuel A. Sheldon,
B. I. Dunn,	Hiram C. Luce,	C. M. Smith,
R. M. Elliott,	Percy McAlpin,	Robert B. Ray,
John E. Ennis,	Phillip Matthei,	James F. Spain.

1860-61.

Chas. Bunce,	Wm. B. Graham,	Richard E. McVey,
Allen S. Barndt,	Henry J. Herrick,	John Murphy,
Wm. C. Brown,	Zenas P. Hanson,	Samuel C. Owen,
Sidney S. Buck,	Clinton D. Henton,	Allen M. Pierce,
Benjamin H. Bradshaw,	Ezekiel Keith,	Henry V. Passage,
Henry S. Blood,	John T. Keables,	Madison Reece,
E. A. Clark,	Enoch W. Keegan,	E. Fred. Russell,
D. M. Cool,	Abner D. Kimball,	Edward P. Talbott,
Thomas J. Dunn,	Robert M. Lackey,	Chas. B. Tompkins,
Edward C. De Forest,	Z. James McMaster,	Theodore W. Stull,
M. M. Eaton,	James M. Mayfield,	Israel B. Washburn,
George Egbert,	Henry H. Maynard,	O. G. Walker.

1861-62.

Albert A. Ames,
Charles E. Allen,
Stephen G. Armstrong,
George W. Beggs,
Aurelius T. Bartlett,
Leonard L. Bennett,
James Brown,
Elijah W. Boyles,
William L. Cuthbert,
J. Griffin Conley,
William D. Carter,
Samuel M. Dunn,
Thomas G. Drake,
James B. Farrington,
A. Z. Huggins,
Jacob H. Houser,
Riley B. Hayden,
JacobM. Hagey,
Clark E. Loomis,
I. Meek Lanning,
George I. Monroe,
William Meacher,
William McKnight,
Fordyce R. Millard,
William Rush Patton,
Holland W. Richardson,
William R. Russell,
Charles M. Richmond,
Robert E. Stevenson,
Samuel B. Ten Broeck,
I. Allen Torrey,
Alfred H. Whipple,
D. Bishop Wren,
John A. Ward,
Egbert H. Winston.

J. C. Taggart, M. D., Honorary.

1862-63.

Gordon Andrews,
Charles F. Barnett,
Ela L. Bliss,
E. Bishop,
Frederick W. Byers,
James Cunningham,
Philo W. Chase,
John W Dean,
William B. Dunkle,
Charles F. Dilly,
Charles S. Elder,
Francis A. Emmons,
Uriah B. Ferris,
Stephen N Fish,
William M. Gregory,
Harrison H. Guthrie,
Myron Hopkins,
Pryer J. Herman,
George F. Heideman,
Samuel G. Irwin,
Daniel C. Jones,
Hiram M. Keyser,
Charles B. Kendall,
James Kelly,
Edward E. Lynn,
Charles F. Little,
G. Allen Lamb,
James Muncey,
George C. McFarland,
Frank C. Mehler,
James H. McNeil,
Thos. J Montgomery,
John McLean,
Samuel L. Marston,
Pitt Y. McCoy,
Elmer Nichols,
J. Copp Noyes,
Cornelius O'Brien,
John Zahn,
Jacob W. Ogle,
Wesley Phillips,
Byron G. Pierce,
William C. Piatt,
John M. Rankin,
James S. Ransom,
Lemuel H. Rogers,
Fernando C. Robinson,
Lewis H. Skaggs,
John W. Saucerman,
Abram L. Small,
W. H. Smith,
H. W. Sigworth,
William Scott,
William H. Tompkins,
Pembroke R. Thombs,
John Ll. Williams,
William T. Wilson,
James A. Williams.

1863-64.

Frank B. Adkins,
Harrison Akely,
Orlenzer Allen,
Samuel J. Avery,
Lyman F. Babcock,
Charles M. Babcock,
A. J. Bacon,
S. K. Barclay,
G. Frank Beasley,
George R. Bibb,
William T. Bradbury,
Charles A. Bucher,
Spencer Byrn,
Frank D. Cass,
F. Marion Cassell,
Lewis H. Goodwin,
J. J. Gulick,
J. Milton Hiatt,
Robert L. Hill,
H. C. Hollingsworth,
Frank A. Jordon,
Erwin L. Jones,
Augustus P. C. Jones,
I. C. Johnson,
George N. Jennings,
John J. Kelly,
Leslie E. Keely,
Robert S. Kelso,
John R. Kerrell,
A. H. Kinnear,
Jabez H. Moses,
Alexander P. Nelson,
E. L. Nelson,
J. N. O'Brien,
Roswell R. Palmer,
G. Hial Peebles,
Edward H. Price,
Charles M. Richardson,
Philip Shaffer,
George W. Schuchard,
William A. Smith,
J. M. Still,
J. Dwight Stillman,
John M. Swift,
John W. Thayer,

Ellston Chamberlin,
James E. Coakley,
Ephraim Dayton,
James W. Dora,
T. B. Dora,
Franklin Eells,
J. Wesley Egbert,
F. Edwin English,
J. B. Fares,
Horace Gaylord,
E. T. Glasener,
J. A. Goldsbury,
L. J. M. Korda,
Bartlett Larimer,
Gilbert B. Lester,
Timothy T. Linn,
Lorenzo D. Lowell,
J. Ellis Lyons,
S. B. McGlumphy,
Peter S. Macdonald,
Samuel Mendenhall,
Henry A. Mix,
Martin E. Munger,
James A. Monroe,
Joel T. Tevis,
Marvin Waterhouse,
John M. West,
William F. Welsh,
J. A. Williams,
James M. Watkins,
G. D. Winch,
Samuel Wilson,
Charles A. White.
Orlando S. Wood,
Titus P. Yerkes.

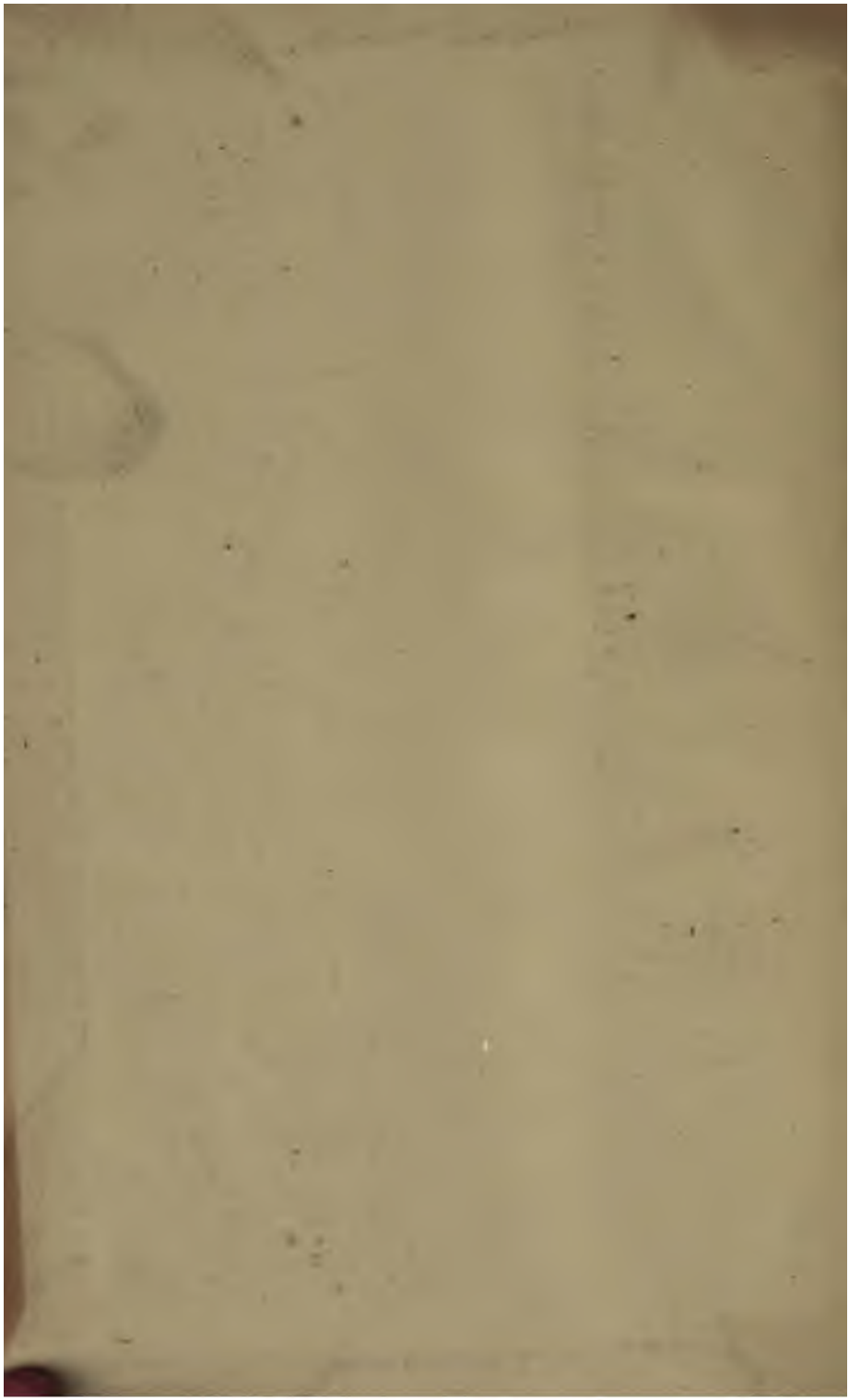
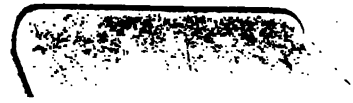
Chas. White, M. D., *ad eundem.*
Frederick S. C. Grayston, M. D., *ad eundem.*

1864-65.

W. R. Adair
J. Madison C. Adams
Henry Allen
R. M. Allen
W. C. Baird
Braxton Baker
Zopher Ball
John Becker
Newton Baker
C. R. Blackall
E. J. Bond
D. W. Bosley
W. E. Bowman
James G. Boardman
J. W. Brown
W. H. Bright
J. G. Blanchard
C. H. Brunk
C. H. Carlisle
E. P. Catlin
W. E. Chamberlain
H. F. Chesbrough
Frederick Cole
Samuel Cole, Jr.
H. N. Clark
J. L. Congdon
J. Cooper
John Cotton
Clinton Cushing
M. Morton Dowler, Jr.
A. J. Darrah
S. A. Davison
S. W. Dodd
A. C. Douglass
A. S. Ehle
Andrew J. Eidson
Samuel S. Elder
Samuel T. Ferguson
S. G. Ferrin
Henry A. Folger
O. D. Ford
J. H. Foster
Samuel Galloway
H. T. Godfrey
R. Romanta Gaskill
J. Thomas Hale
J. M. Harrah
Thomas C. Hance
A. P. Herndon
Wm. H. Hess
Smith H. Hess
J. W. Herdman
Francis M. Hiett
H. Edward Horton
George W. James
Merritt S. Jones
David R. Johnston
Charles Kerr
G. F. Keiper
W. J. Kelsey
John L. Kite
Chas. E. Kuester
C. E. Lamon
J. H. Leal
Josiah Lee
C. J. Lewis
A. W. Lueck
Carl J. Lucas
W. B. Lyons
Isaac L. Mahan
J. G. Meachem, Jr.
L. B. Morrow
William A. Morse
G. D. Maxson
William M. Newell
M. W. Nesmeth
Joseph Otto
William P. Penfield
John W. Powell
Joseph L. Prentiss
G. W. Priest
Charles H. Quinlan
Lafayette Redmon
A. J. Rodman
C. B. Reed
Flavel Shurtleff
J. L. Shepard
Emery Sherman
Asbury E. Smith
W. H. H. Smith
M. S. Stahl
G. A. Stevenson
D. Hedrick Stratton
A. C. Smythe
J. L. Trousdale
John W. Trueworthy
Henry Van Buren
G. W. Van Zant
Theodore Wild
Joseph H. Wilson
Horatio B. Withers
George Worsely
O. P. B. Wright
Charles Young.

The *ad eundem* Degree was conferred on the following named gentlemen:

Martin Baker, M. D.
D. W. C. Denny, M. D.
W. H. Dubler, M. D.
N. Wright, M. D.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